

CLINICAL SURGERY

FOR 6 YEAR



DR. WAEL METWALY

VISIT...

LANZAROTE
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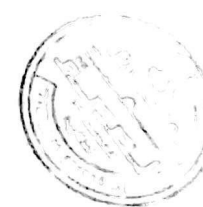
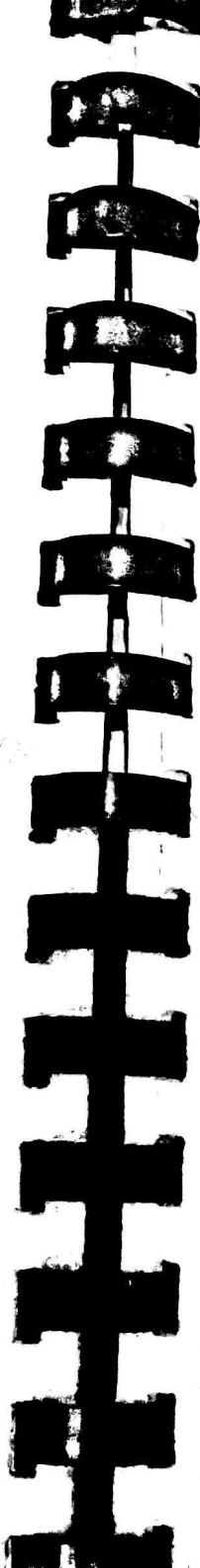
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With My Best Wishes

Dr. Wael Metwaly

Tel: 723606

Mob: 012 2466443



Swelling Sheet

SWELLING SHEET

* **PERSONAL HISTORY**

1. Name
2. Age
3. Sex
4. Occupation
5. Residence
6. Marital status
7. Special habits of medical importance

How to Tell

e.g. A Female patient, named....., aged....., from.....
housewife, Cigarettes per day since..... years.

Q. What are the hazards of smoking? (See Q. 1)

* **COMPLAINT**

"Must be in patient's words" usually **Swelling or Pain**

* **PRESENT HISTORY**

- I. Analysis of complaint (Swelling ± Pain)
- II. Analysis of symptoms related to **Part** affected
- III. Analysis of symptoms related to **Other parts** affected

I. Analysis of complaint (Swelling + Pain)**SWELLING****1. O.C.D. (Onset - Course - Duration)**

• Onset

• Course

☆ **Gradual** as lipoma (weeks or months) ☆ **Progressive** as malignancy

☆ **Sudden** as haematoma (trauma)

☆ **Regressive** as inflammation

☆ **Acute** as inflammation

☆ **Stationary** as lipoma

☆ **Insidious** as 2ry toxic goiter

☆ **Intermittent** as hernia

☆ **Accidental** as cancer breast

☆ **Remission & exacerbation**
as 1ry toxic goiter

2. Swelling

S ☆ **Site** size (lemon size, orange size)

N ☆ **Number**

I ☆ **Investigations & at**

A ☆ **Associated swelling** as (L.N.s)

P ☆ **Pain** "If present"

1. O.C.D2. **Site**3. **Extent**

4. **Characters** as colicky,
dullach, dragging etc..

5. ↑ by

6. ↓ by

7. **Associated symptoms**

8. **Referred or Radiate** for
difference (See Q. 2)

II. Analysis of Symptoms related to Part affected = (disturbance of Fm)

i.e. Pressure symptoms = **Local Complications**

V ☆ **Vein**: Oedema & Varicose vein (How to ask?) (See Q. 3)

A ☆ **Artery**: Color & Trophic changes

Q. What are the **Trophic changes**? (See Q. 4)

N ☆ **Nerve**: Paraesthesia & deformity

Q. What are the difference between **Paraesthesia & Anaesthesia**? (See Q. 5)

- * Before past h-x always ask about
 - review other systems → M4
 - hospital stay (investigation & Hx - new symptom)

III. Analysis of Symptoms related to Other parts affected

i.e. General Complications & Search for the cause.

"Toxic Symptoms" (F.H.M.A)

(Fever, Headache, Malaise, Anorexia)

TB symptoms

"Metastatic Symptoms" (L.B.L.B) cachexia +

I. • **Lung**: chest pain, dyspnea and haemoptysis
For D.D From haematemesis (See Q:6)

B • **Brain**: Headache, Vomiting, blurring of vision etc....

L • **Liver**: Pain at Rt hypochondrium and Jaundice.

B • **Bone**: bone ach, pathological fracture (How to Ask? See Q:7)

* PAST HISTORY *

- * Similar condition
- * Diseases as DM, hypertension, heart disease etc....
- * History of drug allergy.

Similar condition + D.O.D.
M5

* FAMILY HISTORY - Similar condition - consanguinity

- * To exclude any familial tendency as **Cancer breast**

GENERAL EXAMINATION

VITAL SIGNS:

1. Temp "Normal = 36.5-37.2 °C"
2. Pulse Rate. "Normal = 60 - 90 / min"
3. Blood pressure. "Normal = 90- 150 / 60-100 mmHg S/D"
4. Respiratory Rate. "Normal = 16-20 / min"

Vital colors: jaundice, cyanosis, pallor.

GENERAL EXAMINATION [A, B, C, D, E & F]

- A = Appearance** → "Healthy or ill"
- B = Built** → "Over, Average, or Under-weight"
- C = Conscious** → "Conscious or Apathy"
- D = Decubitus** → "e.g. Orthopnea with HF" *Heart failure*
- E = Emotion** → "Alert, Nervous,etc."
- F = Face** → "Toxic face if inflammationetc."

* We comment:

pt looks ill, Average body built, fully conscious, alert, cooperative oriented to time, place & person sitting on bed.
Patient is fully conscious, well oriented to time, place and person. He is of normal memory & mood and co-operative to doctor with average intelligence

D. SYSTEMIC EXAMINATION

For Details: (See each chapter separately)

- Head & Neck - Heart & Chest.- Upper Limb.- Abdomen & Pelvis.- Lower Limb

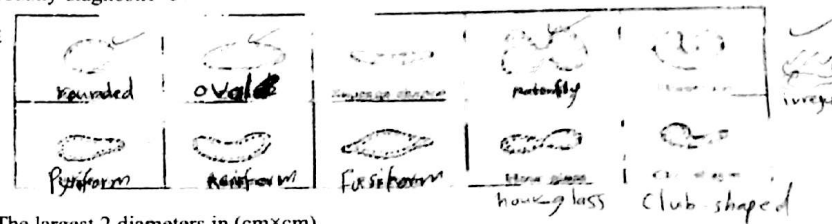
LOCAL EXAMINATION

* INSPECTION N S E D

N — * **Number** Usually single Q. What are multiple swellings in the body? (See Q: 8)

S — * **Site** Usually diagnostic (the anatomical region of swelling)

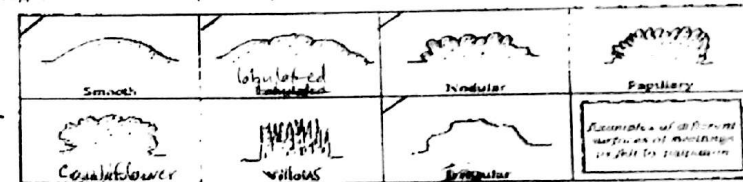
* Shape



* **Size** The largest 2 diameters in (cm×cm)

* Surface

all over palpation of - no feel

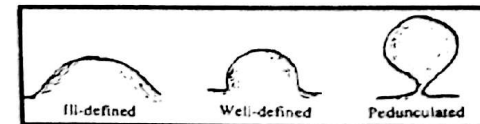


* **Skin over** - Dilated veins, Scar, Ulcer, Redness as inflammation - normally stretched/pigmented

* Special sign

1. Pulsation as Aneurysm, vascular swelling.
2. Expansile impulse on cough as Hernia
3. Move up & down e deglutition as Thyroid Swelling.
4. Move up & down e protrusion of Tongue as Thyroglossal Cyst.

E — * Edge:



3 D. ① Deep structure:

i.e. Relation to deep muscle.

Ask the patient to contract the muscle against resistance & note the degree of prominence to differentiate between the swelling deep or superficial or within the muscle.



- The result If
1. **More prominent** → superficial to muscle
 2. **Same size** → within the muscle
 3. **Less prominent** → deep to muscle

② Distal effect:

- V ☆ Vein → Oedema & Varicose vein (if lower limb)
- A ☆ Artery → Color changes & Trophic changes
- N ☆ Nerve → Deformity.

③ Draining L.Ns For "Metastasis"

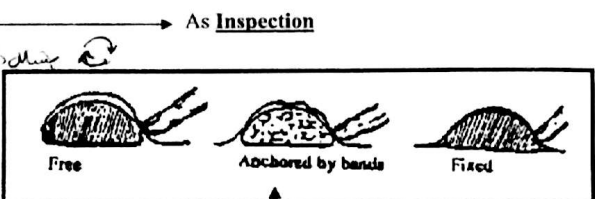
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*** PALPATION TMSECD**

- 3 T **Temp** By dorsum of hand and not the palm. *Why? (see Q. 9)*
- Tenderness** Palpate during watching patient's face. *inflm. swelling mostly tender. neoplastic mostly not tender.*
- Thrill** If present (systolic or continuous). *M12 felt over aneurysm & A-V fistula.*
- M **Mobility** Grasp the swelling & try to push it in all directions.
- relation*
- Q: When is a swelling mobile in All directions?*
- Q: When is a swelling mobile in One direction?*
- Q: When is a swelling Fixed in All directions?*
- For Answers (see Q: 10 → 12)*

- 6 S **Site**
- Shape**
- Size**
- Surface** *باليد. اسطح. حبيبي. أملس.*
- Skin over**

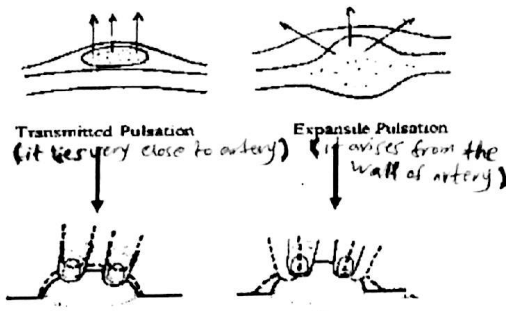
To know if swelling attached to skin or not by **Pinching up skin** (not done), or **Sliding the skin over** (See Diagram).



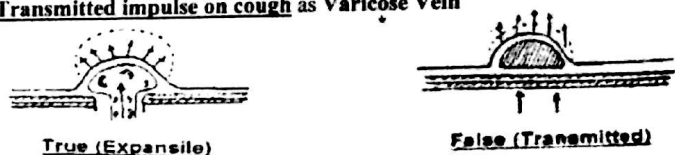
*** Special sign**

- ① **Pulsation** May be
- **Transmitted pulsation** i.e. over artery
 - **Expansile pulsation** i.e. Aneurysm

How to elicit → M14



- ② **Impulse on cough** may be → M14
- **Expansile impulse on cough** as Hernia.
 - For other causes (see Q. 13)
 - **Transmitted impulse on cough** as Varicose Vein



E **Edge** Well defined or Ill defined. → M10

2 C

1. **Consistency** 1st solid or cystic (by **Fluctuation Test**) see below

Then If solid it may be **Firm** - Like a Nose. *Soft = like relax*

Hard - Like a Bone.

Soft - Like a Lobule of Ear

N.B May be **slippery** edge as in **lipoma**



To Differentiate between Solid & Cystic Mass

FLUCTUATION TEST (Test for cystic swellings)

- The **Two index** fingers of both hand are applied as far as the swelling allows.
- **One finger** is **watching** finger & the other moves towards it.
- **+ve Fluctuation test** indicates presence of gas or fluid as in cyst.



N.B

1. Fluctuation must be done in two perpendicular directions why? (see Q: 14)
2. Pseudo-fluctuation can be elicited in lipoma.
3. Other types of fluctuation.

A. Cross fluctuation → M12

← e.g. Psoas abscess in Rt iliac fossa with an extension below inguinal ligament in femoral

B. Bipolar fluctuation e.g. in Hydrocele

C. Paget's test: indicated if

- Too Tender.
- Too Tense.
- Too Deep.
- Too Small < 2 cm

N.B. → When the test inconclusive

The idea is to compare consistency of center.

1. Solid: Center is **firm** that at periphery.
2. Cystic: Center is **soft**



2. **Compressibility & Reducibility**

"Look for diagram"



★ **COMPRESSIBILITY:**

"Disappear partially or completely on pressing the whole swelling & return to it's normal size on releasing pressure" e.g. **Saphena Varix**, **hemangioma**.

★ **REDUCIBILITY:**

"Decrease in size or disappear when compressed into certain direction & reappear only on cough" e.g. **Hernia**.

- 3 D
- ① **Deep structure:** i.e (Muscle)
Examine mobility before & after contracting muscle.
 - ② **Distal effect:**
 - V ☆ Vein → Oedema (pitting or non pitting).
 - A ☆ Artery → Pulsation.
 - N ☆ Nerve → Sensory & Motor examination.
 - ③ **Draining L.Ns** For "Metastasis"

★ **PERCUSSION**

Over swelling: may be

- **Resonant** = gas swelling e.g **Hernia**.
- **Dullness** = solid or cystic e.g **Lipoma**.

★ **AUSCULTATION**

- **Over vascular swelling:** may be
 - **Systolic** murmur as **Aneurysm**.
 - **Continuous** murmur as **A-V Fistula**

• **Venous Hum:** as in Portal hypertension. (by pill not distended)

• **Gurgling of intestine:** as **Enterocoele** or **hernia**.

★ **TRANSILLUMINATION**

As **Hydrocele** or **Meningocele**

DIAGNOSIS

- 1) **Anatomical** → Site or Organ involved.
 - 2) **Aetiological** → Congenital, traumatic, infl., neoplastic etc.
 - 3) **Functional** → Complicated or not.
- Ass. condition → T.B., DM, chronic bronchitis, LCF, arthritis etc.

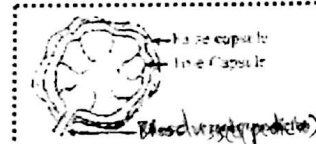
EXAMPLES

The Most important clinical cases:



1. **Lipoma.**
2. **Sebaceous cyst.**
3. **Dermoid cyst**
- V 4. **Haemangioma.**
- L 5. **Lymphangioma.**
- N 6. **Neurofibroma.**

THE MOST IMPORANT "CLINICAL CASES"

	[1] LIPOMA	[2] SEBACEOUS CYST
I. DEFINITION	☆ Benign Tumor of Adipose ☆ It may be: 1. Pure lipoma (Commonest). 2. Fibrolipoma i.e. Contain Excess F.T. 3. Haemangiolipoma = Naevolipoma	☆ Retention Cyst ☆ It is caused by: (obstruction of the duct of sebaceous cyst) by 1. Inspissated sebum. 2. Dirts.
II. PATHOLOGY	☆ Yellowish Lobulated aggregations of fat cells 	☆ Epidermoid cyst: 1. Stratified squamous epithelium 2. Sebum with bad odor. ☆ Blocked by black dot called (Punctum)
III. SITE	1. Sub-cutaneous: (Back) commonest. 2. Sub-fascial: Deep to deep fascia. 3. Sub-periosteal: i.e. flat bone. 4. Sub-synovial: i.e. osteoprosis of knee. 5. Sub-mucous: e.g. larynx or intestine. 6. Sub-serous: i.e. Retroperitoneal. 7. Inter-muscular: simulate abscess. 8. Intra-muscular: D.D. fibrosarcoma. 9. Extra-dural (Spinal): paraplegia (rare). 10. Intra-glandular: e.g. Breast. Never in Brain or Eye lid	☆ Hairy area (Back). [Face - Scalp - Trunk - Scrotumetc.] Never in Palm or Sole
IV. COMPLICATIONS	1. Compression Manifestations. 2. Retroperitoneal Type • Sarcomatous transformations. 3. Calcifications especially in • Axilla, groin, Buttocks.	1. Infection & Suppurations 2. Localized Alopecia. 3. Cock's Tumor: Ulcerated infected scalp with raised edge & NO Indurated base. 4. Sebaceous Horn: Successive layer of dried inspissated sebum.
V. TREATMENT	• IF Solitary: i.e. Enucleation by elliptical incision. • IF Multiple Removal of the most complicating one	• IF Uncomplicated Excision with local anaesthesia. • IF Complicated Incision drainage then excision

EXAMINATION

	[1] LIPOMA	[2] SEBACEOUS CYST
	Benign Tumor of Adipose Tissue ورم دهانی	Retention Cyst کیس دهانی
* INSPECTION		
N	Usually single	Single or multiple
6S	☆ <u>Sub-cutaneous</u> (The commonest) or <u>Sub-fascial</u> (deep to deep fascia) For other sites (See before) ☆ <u>Never</u> in Brain or Eye lid	☆ <u>Hairy area</u> as face, scalp, trunk, or scrotum. ☆ <u>Never</u> in <u>Palm or Sole</u>
☆ Shape	☆ Oval or round	☆ "The same"
☆ Size	☆ Variable	☆ "The same"
☆ Surface	☆ <u>Lobulated</u> surface	☆ "The same"
☆ Skin over	☆ Normal or Show <u>Dimpling</u> slight depression	☆ Show <u>Punctum</u>
☆ Special sign	☆ <u>No</u> special sign	☆ "The same"
E	☆ <u>Edge</u>	☆ <u>Well defined</u> edge
3D	☆ Deep muscle → <u>Superficial</u> to it. ☆ <u>No</u> distal effect → A or V or N ☆ <u>No</u> draining L.N "Enlargement".	☆ "The same" ☆ "The same" ☆ "The same"
* Palpation	<u>TMSEC D</u>	<u>TMSEC D</u>
3T	☆ <u>Not</u> (tender, hot or thrill).	☆ "The same"
M	☆ <u>Mobile</u> (in all directions)	☆ "The same"
6S	☆ As Inspection + attached to skin by fibrous strand so <u>Dimpling</u> 	☆ As Inspection but <u>No Dimpling</u>
E	☆ <u>Slippery</u> edge	☆ <u>Well defined</u> edge
C	☆ <u>Soft</u> in consistency (<u>pseudo-fluctuant</u>)	☆ <u>Fluctuant</u>
3D	☆ Same as Inspection	☆ "The same"

Why lipoma

Because of 2P + SS



2P → Painless & Pseudo-fluctuant

SS → Slippery Edge, Soft in Consistency, Skin shows Dimpling, Superficial to muscle & Surface is lobulated (Sub-cutaneous) or smooth (Sub-fascial)

3. DERMOID CYST

* DEFINITION

It is a Cyst lined by Stratified Squamous Epithelium.

* TYPES

1. Sequestration Dermoid Cyst

- It is a Congenital inclusion of a piece of epithelium in the S.C. Tissue at line of fusion of the body during the foetal Life

- The Commonest sites: ① Face: External & Internal Angular Dermoid.
② Neck & Trunk: Middle line (Ant. & post.)

N.B: Dermoid cyst Never appears in upper & Lower Limbs because they appears as Buds & not by fusion.

- Examination of Dermoid Cyst:

(A) Inspection: ① Usually Single. At line of fusion.
② Hemispherical in shape with variable size.
③ Well defined edge.

(B) Palpation: ① Not Attached to skin
② Lax & Cystic in consistency.
③ Bony depression due to constant pressure



2. Tubulo dermoid

☆ Due to distension of Remnants of Embryonic ducts as Thyroglossal Duct & Embryonic cyst as Branchial Cyst.

3. Teratomatous Dermoid

☆ It is a Benign Teratoma contains Teeth, Hair, Bone, Cartilageetc.
& It occurs mainly in Ovary & Testis.

4. Inclusion Dermoid

☆ It is due to inclusion of epidermis during closure of a cavity as Supra-sternal region.

5. Implantation Dermoid

☆ It occur 2ry to puncture of wounds which displace some epithelial cells in S.C. Tissue → Cyst formation. It occurs mainly in the Fingers, Palm & Sole

* TREATMENT

All Cases are treated by Excision

HAEMANGIOMA

A. Capillary

B. Arterial

C. Venous

It is Not a True Tumor, but Tumor like i.e. Hamartoma
Hamartoma = Congenital Malformation or Error of vessels

A. Capillary Haemangioma

1. STRAWBERRY NAEVUS

- **Site:** The commonest site is Face.
- **Colour:** Bright red.
- **Surface:** Slightly Raised above the surface.
- **Course:** Present shortly after birth [1-3 weeks] then after one year it starts to undergo involution.
- **Treatment:** Not required because of it's spontaneous involution except if complicated.



2. PORTWINE STAIN

- **Site:** Along the distribution of cutaneous nerve frequently trigeminal nerve of the face and never crosses the middle line.
- **Colour:** Dark Purple.
- **Surface:** Usually Flat.
- **Course:** Present Since Birth & Doesn't undergo involution.
- **Treatment:** LASER Application is the choice. Excision & grafting is very difficult as it may involve a large area of the face.



3. SPIDER NAEVI

- **It occurs with** patients having L.C.F. or Portal Hypertension.
- **It is due to** Hyperoestrogenaemia or unknown cause.
- **It consists of multiple** dilated arterioles at the distribution of S.V.C.



B. Arterial Haemangioma

Cirroid Aneurysm

- **It is a Dilated Tortuous Arterioles**
Occurring mostly in the scalp "Temporal & occipital" regions.
- **It Appears as** Soft Compressible & Pulsating mass
- **The Treatment:**
 - ① **Pre-operative Embolization** by Gel foam
 - Then** ② **Ligation** of feeding vessels.
 - Then** ③ **Excision** of Aneurysm.



C. Venous Haemangioma

- **It is a Spongy Network** of dilated veins like a cavity. It is connected to the systemic circulation
- **Examination:**
 - ① Since birth with no involution
 - ② Reddish swelling of mucus membrane of lips & Tongue. It may involve internal organs as liver
 - ③ Soft, Compressible but Non Pulsating mass.



N.B: It is Complicated by Severe bleeding due to mild trauma or Septicemia due to 2ry infections

- **Treatment:**
 - ① **LASER Therapy**
 - or ② **Injection** of sclerosing material.
 - or ③ **Surgical Excision.**

5. LYMPHANGIOMA

[A] Capillary Lymphangioma

[B] Cavernous Lymphangioma

It is Not a True Tumor, but Tumor like i.e. Hamartoma
Haematoma = Congenital Malformation or Error of vessels

" Cystic Hygroma "

* DEFINITION

It is a sac formed from sequestered part of jugular lymph sac of foetus.

* PATHOLOGY

- **It Consists** of Multiple Intercommunicating Cystic Lymph Space.
- **It is lined** by Endothelium.
- **It contains** Lymph.



* CLINICAL PICTURE

- **Age:** Since Birth or Shortly after.
- **Site:**
 - ① **Common** at lower part of side of neck superficial to Sterno-mastoid & extends to post. Triangle.
 - ② **The next common** site is Axilla alone or with Neck.
 - ③ **The less common** Check, Lip (**Macrocheilia**) & Tongue (**Macroglossia**)
- **Characters:** Irregular shape, large in size. Ill defined edge. Translucent, Lax, Cystic & Compressible but non pulsating mass

* TREATMENT

- ① **Excision** as early as possible
- or ② **Injection** of boiling water of sclerosing material weekly → Fibrosis
- or ③ **IF infected** give A.B. → Fibrosis

6. NEUROFIBROMA

It is a Congenital Disease affecting Nerves.
The Tumor arises from fibrous neurolemmal sheath.

A. Generalized Neurofibromatosis

"Von Recklinghausen's Disease"

- It is **Multiple Tumors** of the body along the course of cranial & spinal nerves.
- It is diagnosed by
 - ① Painless swelling.
 - ② Fusiform in Shape. Firm in consistency and Mobile across but not along the course of nerve.
 - ③ Associated with brown pigments "Cafe au lait" patches



N.B: Neurofibroma not interrupt the nerve function. Because There is No paralysis or pain or anesthesia except if sarcomatous Transformation occur.

- **Treatment:**
Removal only of tumors causing pain or pressure effect.

B. Solitary Neurofibroma

- As Generalized but single.



C. Acoustic Neuroma

- **Neurofibroma arising from Acoustic nerve** leading to Deafness & cerebellar symptoms. It may be single or part of generalized type.

D. Elephantiasis Neuromatosa

- It is **Elephantiasis of the limb** + Mechanical block of the joint + "Cafe au lait" patches.

E. Plexiform Neuroma "Pachydermatopoele"

- It affects **S.C nerve plexuses** leading to thickening of the nerves & Redundant thickened skin



N.B. Neurosarcoma: (De-novo or on Top of Neurofibroma)
Characterized by
1. Rapidly growing mass
2. Local Infiltration & Distant metastasis.
3. Paralysis of corresponding muscles.

DISEASES OF BURSAE, TENDONS & FASCIA

[1] BURSITIS

* TYPES OF CHRONIC BURSITIS

1. House-maid's knee (Pre-patellar Bursa)

- ☆ **Present** as **S.C** fluctuant swelling.
- ☆ **Site:** Over the lower part of patella.



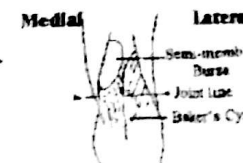
HOUSEMAID BURSA

2. Student's Elbow (Olecranon Bursa)

- ☆ **Present** as **lax** fluctuant swelling.
- ☆ **Site:** Over the Olecranon process.

3. Semi-membranous Bursa

- ☆ **Present** as Swelling & characterized by becoming **Tense** on Extension & **Flaccid** on Flexion of knee
- ☆ **Site:** Medial part of popliteal fosse & above the joint line.



Semi-membranous

N.B D.D from Baker's Cyst

Which is herniation of synovial membrane of knee joint with oste-oarthritis patients & present at center of popliteal fossa below joint line.

* TREATMENT Excision

[2] SIMPLE GANGLION

* DEFINITION

It is a **Myxomatous degeneration** of **Tendon sheath**. It contain jelly like mucin.

* CLINICAL PICTURE

- ☆ Localized, Tense, Cystic, painless & related to tendon. **Back of wrist** is the commonest site.
- ☆ It is **mobile across** but **not** along.

* TREATMENT Excision



N.B Compound Ganglion

It is **T.B Synovitis** of **Synovial sheath** of tendons under **Flexor Retinaculum**. Characterized by "Cross Fluctuation Test"

ORAL DISCUSSION

SWELLING

QUESTIONS ON SHEET

Q1. What are Hazards of smoking as special habites?

- ☆ **CVS** → Atherosclerosis & Coronary heart disease.
- ☆ **Chest** → Emphysema & Bronchial carcinoma.
- ☆ **GIT** → Peptic ulcer.
- ☆ **Cancer** → Cancer (Lip, Tongue & Oesophagus).
- ☆ **Pregnancy** → Maternal e.g. placenta praevia.
→ Foetus e.g. ↑ Risk of mortality.

Q2. What are the DD between Radiated pain & Referred pain?

☆ Radiated pain:

Pain felt in 1ry site and reached to another site. Supplied by same dermatomal supply.
e.g. Acute Cholecystitis (pain at Rt. hypochondrium & radiated to Rt. shoulder).

☆ Referred pain:

Pain felt completely in another area supplied by same dermatomal supply.
e.g. Acute pancreatitis (pain referred to back).

Q3: How can you ask about varicose vein in sheet?

عروق بتفلس

Q4. What are the Trophic changes of hand ?

- ☆ Skin is dry.
- ☆ Hair is lost.
- ☆ Nail is brittle & fissured.

Q5. What are the DD between paraesthesia & anaesthesia ?

- ☆ **Paraesthesia**: Gradual loss of sensation.
- ☆ **Anaesthesia**: Complete loss of sensation.

Q6. What are the DD between Haemoptsis & Haematemesis ?

	Haemoptsis	Haematemesis
1. History	Chest disease	GIT disease
2. Preceding	Cough	Vomiting
3. Following	Blood stained sputum	Melena
4. Blood	- Bright red - Alkaline - With frothy sputum	- Dark red - Acidic - With food particle

Q7. How can you ask about pathological fracture?

Multiple, Recurrent, Minor trauma → Multiple fractures



N.B Pathological fracture discovered accidentally by x-ray

Questions on Examination

Q8. What are the Multiple swellings all over the body ?

- Lipoma
- Sebaceous cyst
- Osteoma
- 2 ries
- A → Haemangioma
- V → Varicose veins.
- N → Neurofibroma
- L → L.Ns

Q9. Why do you use the dorsum (Not palm) of hand to elicit temp.?

Because the palm is sweaty.

Q10. When is a swelling mobile in all directions?

Swelling at skin or S.C. tissue.

Q11. When is a swelling mobile in one direction ?

- Swelling at - Muscle e.g. Desmoid tumor.
- Tendon e.g. Ganglion.
- Nerve e.g. Neurofibroma.
- Artery e.g. Aneurysm.

Q12. When is a swelling Fixed in all directions?

Swelling at Bone e.g. osteoma of skull.

Q13. What are the swelling showing expansile impulse on cough? Why?

- ☆ **Hernia**: Because of (↑ Intra-abdominal Pressure). = in swelling to continuity of abd. cavity
- ☆ **Meningocele**: Because of (↑ Cerebro-spinal Pressure). = = = = = spinal cord
- ☆ **Pneumatocele**: Because of (↑ Intra-thoracic Pressure). = = = = = pleural cavity
- ☆ **Laryngocele**: Because of (↑ Intra-laryngeal Pressure).

Q14. Why is Fluctuation must be done in 2 perpendicular plans ?

Because, Flethy muscle is fluctuant in one direction i.e. across musk fibers

Questions on Lipoma

Q15. What is meant by 'Dercum's disease'?

It is a Diffuse type of lipoma also called (Adiposes Dolorosae)

Q16. Why is lipoma characterized by 'slippery edge' ?

Because, movement of mass inside it's capsule.

Q17. Why is lipoma considered 'pseudo-fluctuant' ?

Because, it is liquid under body temp. only. i.e. Pseudo-cyst.

Q18. When is lipoma becoming firm or Hard?

- ☆ **Firm**: Sub-fascial lipoma
- ☆ **Hard**: Sub-periosteal lipoma.

Q19. Why is lipoma not Aspirated ?

Because, it is a true Fat cells i.e. Never aspirated.



✓ Q20. **How can you diagnose (Lipoma) & (Sebaceous cyst) by one sign ?**

✧ Lipoma: By Slippery edge.

✧ Sebaceous cyst: By Punctum.

✓ Q21. **How can you express the size of lipoma ?**

1. In c.m

or 2. Common objects e.g. olive, lemon.....

or 3. Patient's fingers e.g. liver, spleen.

✓ Q22. **Can Lipoma kill? How ?**

✧ Yes, At dangerous sites.

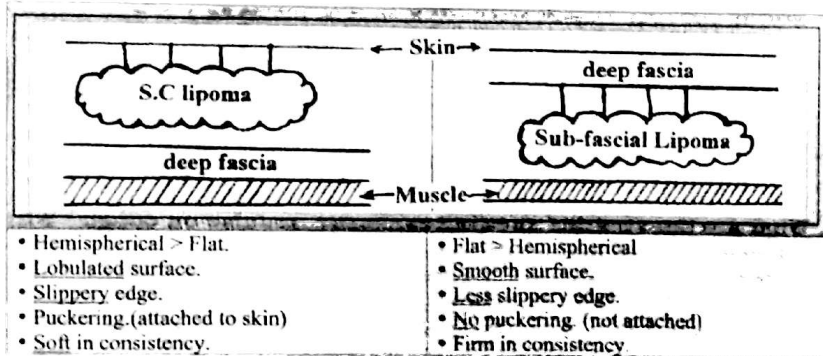
1. Sub-mucous → Intestinal obstruction & Laryngeal obstruction.

2. Retroperitoneal → Liposarcoma.

✓ Q23. **Can Lipoma lead to Urgent abdominal Exploration?**

✧ Yes, if sub-mucous (Intestinal obstruction)

✗ Q24. **What Is the Difference between S.C lipoma a Sub-fascial Lipoma?**



✓ Q25. **Which is more large, Sub-mucous Lipoma of pharynx or subcutaneous lipoma of back?**

✧ Subcutaneous lipoma of the back is much more larger because sub-mucous Lipoma intra-oral has earlier presentation

Q26. **What is the most characteristic sign in cavernous haemangioma?**

✧ Compressible & Non-pulsating.

Q27. **When is Cavernous Haemangioma pulsating?**

✧ When connected with an artery.

Ulcer Sheet



Good luck

Chapter 2

I. ULCER SHEET



* PERSONAL HISTORY

1. Name 2. Age 3. Sex 4. Occupation
5. Residence 6. Marital status 7. Special habits of medical importance.

* COMPLAINT

"Sore at....."

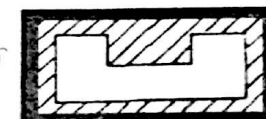
* PERSONAL HISTORY

A → O.C.D

B → Analysis of Complaint:

1. Site: (V. imp for Diagnosis)
3. Pain: (If Inflammatory or Infected)
5. Complication: (as Talipes Equinus)
7. Investigations

2. Number
4. Discharge
6. Associated swellings
8. Treatment



تورم
swelling

C → Aetiology

- ☆ Congenital → (Haemolytic Anemia) Rare
- ☆ Traumatic → (Bed sore or Trauma)
i.e. history of Trauma
- ☆ Inflammatory → T.B Ulcer (Night sweat & fever + loss of weight & appetite)
→ S Ulcer (Skin rashes + F H M A)
- ☆ Neoplastic → (Marjoline Ulcer)
i.e. Metastasis As L B L B (Page 2)

- A ☆ Arterial → Ischaemic Ulcer.
(i.e. history of Claudication pain)
- B ☆ Venous → Venous Ulcer.
(i.e. history of associated V.V)
- L ☆ Lymphatic → Lymphoma.
(i.e. history of multiple swellings all over the body)
- N ☆ Nervous → Neurotrophic Ulcer as Diabetic Neuritis.
(i.e. history of numbness or sensory loss)

* History of medical important disease e.g "D.M"* Examination

II. GENERAL EXAMINATION

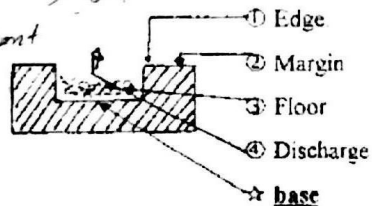
GENERAL EXAMINATION Depends on the cause of ulcer
e.g Haemolytic Ulcer & (Splenomegaly)

III. LOCAL EXAMINATION

(Ulcer = Discontinuity of skin or mucous membrane)

* INSPECTION

- * **Number** Usually single → malignant
multiple → T.B
- * **Site** Usually diagnostic
"See later"
- * **Shape** Oval, Rounded or Irregular
- * **Size** In (cm × cm)



* **Edge** "It is the junction between raw area & intact epithelium"

- It may be:
- Irregular = Trauma
 - Punched out = S, Trauma, etc.
 - Sloping = Healing Ulcer
 - Undermined = T.B Why (See Q: 1)
 - Raised & Everted = Malignant Ulcer
 - Rolled in = Rodent Ulcer which is Locally malignant

* **Margin** "It is the region between the edge & normal epithelium"

- It may be:
- Red → as Inflammatory Ulcer (redness, tenderness)
 - Blue → as in T.B Ulcer (See Q: 2)
 - Brownish → as V.V Ulcer (See Q: 3) (pigmentation & eczema)
 - Black → as Melanoma

- May be also:
- Oedema & Varicosities → as Venous Ulcer
 - Dilated capillaries → as Rodent Ulcer
 - Pigments → as Trauma
 - Rashes → as S

* **Floor** "It is the Visible area surrounded by the edge"

- Contain: Granulation Tissue, Crust, Necrotic or Caseous material.

Q. What is the granulation tissue formed of? (See Q: 4)

Then comment on healthy & unhealthy granulation tissue

- **Healthy** → Painless, Pink, Not ooze or bleed easily
- **Unhealthy** → Painful, Yellow, Ooze or bleed easily

* **Discharge** "Type (Blood, Pus, or Yucca, Amant, Odour)"

- Clinically Inspected at daily dressers

* PALPATION

1. Temp
2. Tenderness (See Q: 5)
3. Skin around "Soft or Hard"
e.g Post-Phlebotic limb.
4. Base:

"It is the Zone in which ulcer situated"

- Soft or hard (indurated)
- Fixed or not (to underlying structure like ms, cartilage or bone)

- N.B
1. Indurated at margin = Inflammatory or Benign ulcer.
 2. Indurated beyond the margin = Malignancy.
 3. Indurated not beyond the margin = locally malignant.

5. Arterial pulsation: as dorsalis pedis artery
6. Venous Oedema
7. Lymph nodes at the region: Firm or hard (See Q: 6)
8. Nervous cause: Examine the sensation.

N.B: The site is Diagnostic

I. Ulcers of leg & foot

- Metaphysis of bone = T.B
- Middle 2/4 of tibia = Trauma, S or Haemolytic Ulcer.
- V • Gaitre area = Venous Ulcer.
- L • Dorsum of foot = Lymphodema.
- A • Toes & Foot = Ischaemic Ulcer.
- N • Sole = Neuropathic Ulcer.

II. Ulcers of head

1. basal cell carcinoma: at area above (line between angle of mouth & lobule of ear) & below (thaw line)

2. Epithelioma: at Lower lip.

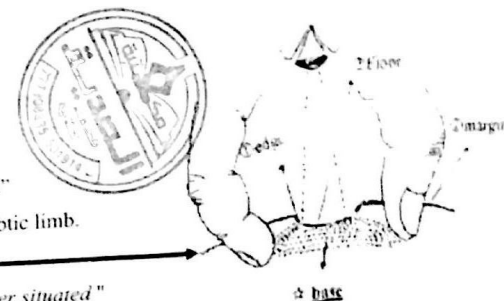
3. Others: as (Kerato-acanthoma, T.B, S or Melanoma)

III. Ulcers of Neck

- The most common is T.B Ulcer at site of (upper deep cervical L.Ns)

Q. What are differences between ulcer, sinus and Fistula? (See Q: 7)

- special investigations: M293.
- provisional diagnosis: 293.



RODENT ULCER

★ PERSONAL HISTORY

1. Name
2. Age: Above 40 years.
3. Sex: Male > Female.
4. Occupation: Outdoor occupation i.e. Prolonged Exposure to Sunlight.
5. Race: White > Black
6. Residence
7. Marital Status
8. Special habits of medical importance.

★ COMPLAINT Patient presents by a Small nodule which ulcerates

★ PERSONAL HISTORY

- I. Analysis of Complaint
- II. Analysis of symptoms related to Part affected
- III. Analysis of symptoms related to Other parts affected

I. Analysis of complaint

★ Ulcer • O.C.D. → Gradual onset and Progressive course.

- PAINS
 - Site → 90 % → At area above (line between angle of mouth & lobule of ear) & Below (hair line)
 - 10 % → other areas as dorsum of hand.
 - Number.
 - Investigation & its Cause:-
 - Associated Swellings → If Infected or Epitheliomatous Transformation
 - Pain (if present) → It is due to Infection

★ Pain Analysed as usual.

II. Analysis of symptoms related to part affected

i.e. Local Complications (e.g. change, sinus)

- Direct spread is the only line of spread so it may leads to Erosion of skull & Erosion of big vessels so leads to severe Hemorrhage

III. Analysis of Symptoms related to other parts affected

i.e. General Complications

➤ FHMA (See page 2)

- Meningitis or cavernous sinus thrombosis (Cause of death). (See Q: 9)

➤ LBLB (See page 2) Epitheliomatous Transformation.

- ★ Pathology
 - Similar condition
 - Diseases as DM, hypertension, heart diseaseetc.

★ Contraindications

EXAMINATION OF

RODENT ULCER



* INVESTIGATIONS

- ★ Lab. (blood, urine, stool)
- ★ Aspiration Bopsy Cytology (A.B.C)
- ★ Bopsy (must include the edge)
- ★ Specific as X-ray Skull

* TREATMENT

I. Irradiation 3400 R for 14 days.

- Indicated in
Old patient with large lesion.
- Contraindicated
(See indications of surgical tt.)

II. Surgical excision cures rapidly
yields better cosmetic results.

- Indicated in
 1. Very small.
 2. Ulcer near the eye.
 3. Recurrence after irradiation.
 4. Resistant to irradiation.
 5. Ulcer infiltrating bone or cartilage because malignant cells are hidden So →
 - Efficient dose will leads to → irradiation necrosis. of bone or cartilage.
 - Low dose will leads to → high risk of recurrence

• Technique

Excision with safety margin about 1 cm of surface & depth.
then cover with graft or flap.

III. Curettage & Cautery

If Multiple

IV. Cryosurgery If Small.

V. Fluorouracil: If Superficial but this line has high rate of recurrence.



* Inspection

- ★ Number • Usually Single
- ★ Site • Face (see before)
- ★ Shape • Rounded or Oval
- ★ Size • Variable (in cm)

- ★ Edge • Rolled in edge & Beaded.

- ★ Margin • Dilated capillaries, many pigmented brownish.
- ★ Floor • Red & Covered by Crust.

- ★ Discharge • Blood & pus

* Palpation

1. Temp • At Body Temp.
2. Tenderness • Not Except (If infected)
3. Skin around • Thick
4. Base • Indurated But not beyond the margin & fixed

A 5. Artery

V 6. vein

L 7. L.Ns

N 8. Nervous

- Normal Pulsation

- No Oedema

- Not enlarged Except if infected or Epitheliomatous transformation

- Intact sensation

Q: What is meant by Submarine or Iceberg type? (See Q:11)

EXAMINATION OF VENOUS ULCER



* Inspection

- ☆ **Number**
 - Usually Single
- ☆ **Site**
 - **Leg** (Ulcer Bearing Area)
- ☆ **Shape**
 - Rounded or Oval
- ☆ **Size**
 - Variable (in cm)
- ☆ **Edge**
 - **Sloping** edge or **Punched out** edge
- ☆ **Margin**
 - Brownish pigment
- ☆ **Floor**
 - **Unhealthy** Granulation Tissue (describe)
- ☆ **Discharge**
 - Pus (Purulent discharge)

* Palpation

1. Temp
 - At Body Temp.
2. Tenderness
 - **Not** Except if infected
3. skin around
 - Thick, brown & varicosities
4. Base
 - Tender & Hard

- A 5. Artery
- V 6. vein
- L 7. L.Ns
- N 8. Nervous
- **Normal** pulsation
 - **Oedema**
 - IF 1ry V.V → Pitting
 - IF 2ry V.V → Non pitting
 - **Not** enlarged except if **infected**
 - Intact sensation

* INVESTIGATIONS

- ☆ Lab. (blood, urine, stool)
- ☆ Aspiration Biopsy Cytology (A.B.C)
- ☆ Biopsy (must include the edge)
- ☆ Specific to the cause
 - e.g. X-ray to exclude Periostitis

* TREATMENT

A. Conservative ttt: AS (V.V)

- & - Daily Dressing.
- Systemic A.B if infected.

B. Surgical ttt:

1. **Covering ulcer** by
 - Thiersch graft or
 - Cross Leg Flap.
 - (Debridement must be done 1st)

2. **Sub-fascial legation of Perforators**

- (Cockett & Dodd) operation
- By passing from muscles to penetrate deep fascia through postro-medial incision behind the tibia.
 - Complicated by Ugly scar & high rate of Recurrency

3. **Treatment of complications**

- **Malignancy:** Excision with safety margin 1cm of surface and depth with Plastic Reconstruction & Prophylactic block dissection of L.Ns
- **Periosteitis:** Saucerization
- **Talipes Equinus:** Physiotherapy

Q: What are the characters of **'Post phlebitic limb'** ?



ORAL DISCUSSION

ULCER

ORAL QUESTIONS

Q1. **Why is The Edge of T.B Ulcer being Undermined?**

Because destruction of S.C tissue > Skin destruction

Q2. **Why is The Margin of TB ulcer being Cyanotic?**

Because of ischaemic margin.

Q3. **Why is The Margin of Venous Ulcer being Brownish?**

Because of Extra-vasation of blood → Haemolysis → Haemosidren which is brownish in color.

Q4. **What are The Granulation Tissues formed of?**

Dilated Capillaries & Fibroblasts.

Q5. **What are The Causes of Painful ulcer?** or *tenderness?*

- Inflamed
- Infected • T.B
- Late malignant. (only late)
- Ischaemic ulcer
- Post-phlebitic ulcer = *venous ulcer*

Q6. **What are The Characters of Infected & Malignant L.Ns?**

- **Infected** L.Ns: Firm & Tender.
- **Malignant** L.Ns: Hard. & Not Tender

Q7. **What are The D.D. between Ulcer, Sinus & Fistula?**

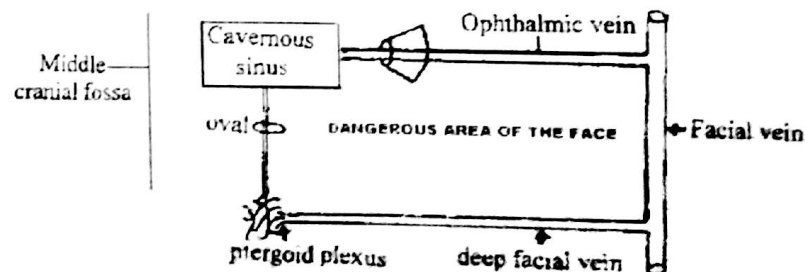
- ☆ **Ulcer:** Discontinuity of skin & mucous membrane e.g. Venous ulcer
- ☆ **Sinus:** Track that communicates between the skin surface & blind end e.g. T.B. sinus
- ☆ **Fistula:** Track that communicates between epithelial-surface. e.g. Intestinal fistula

Q8. **What is Meant by 'Indolent ulcer' or 'Callous ulcer' ?**

- ☆ **Indolent Ulcer** Ulcer resist to heal.
- ☆ **Callous Ulcer** Ulcer with hard edge & base.

Questions on Rodent ulcer

Q9: **What is Meant by ' Dangerous area of The face' ?** See diagram



Q10. What is The Cause of death of Rodent ulcer?

Meningitis or Cavernous sinus thrombosis.

Q11. What is Meant by (Submarine or Iceberg) type?

In spite of surface of lesion may appear small, there is extensive invasion under skin.

Q12. What are The (Basal cell carcinoma) all over the body?

- ☆ Skin - Rodent Ulcer.
- ☆ Hair follicle : Trichio-epithelioma.
- ☆ Sweat gland: Syringoma.
- ☆ Salivary gland: Cylindroma.
- ☆ Mandible: Admantinoma.
- ☆ Upper end of the tibia

Questions on Venous ulcer

Q13. What is Meant by 'Gaiter area' or Ulcer bearing area?

2,4,6 inches above medial malleolus.

Q14. What is the cause of Varicose Veins?

- ☆ 1ry venous ulcer with in V, V [common & minimal]
 - Due to → Congenital weakness of venous wall.
 - Congenital absence or incompetence of valves.
- ☆ 2ry venous ulcer with 2ry V, V [common & marked]
 - Due to → DVT (Deep Venous Thrombosis).
 - Deep venous compression.
 - A.V. Fistula.

Q15. What is The Pathogenesis of Venous ulcer?

(White Cell Trapping Theory) Venous Hypertension → S.C Capillary proliferation → ↑ W.B.Cs. The Trapped W.B.Cs becomes activated → ↑ Release of Proteolytic Enz. → Injury of capillary endothelium → Venous Ulcer

Q16. What are The causes of DVT?

- ☆ 50 % post-operative [fracture neck femur & post prostatectomy]

Q17. What is The Most common site of DVT?

Calf muscle of lower limb.

Q18. What is The Most common presentation of DVT?

Tender Calf muscle.

Q19. What is Meant by 'Marjoline ulcer' ?

Malignant Venous ulcer.

Q20. What are the commonest causes of leg pain?

- A = Arterial → Ischaemic pain.
- V = Venous → Varicose vein.
- L = Lymphatic → Tender L.N.
- N = Nerve → Sciatica.
- Muscle → Myopathy
- Bone → Osteomyelitis.
- Joint → Osteoarthritis.
- Ligament → Flat foot

Good luck

Thyroid Gland Sheet



Chapter 3

THYROID GLAND

INTRODUCTION

★ ANATOMICAL

The Gland is composed of 2 lateral lobes connected by An Isthmus

★ PHYSIOLOGICAL

- The Gland secretes 3 Types of hormones (T3, T4 and Thyro-calcitonin)
- The Effect of Thyroid Hormones
 - a. Catabolic effect: (↑ Lipolysis - ↑ Proteolysis - ↑ Glycogenolysis)
 - b. Metabolic effect: (↑ MR & Energy libration) So, Thyroid Hormones is Thermogenic
 - c. Stimulate → Skeletal growth, Sexual maturity and Mental development
 - d. ↑ Sensitivity of (α & β receptors) for Catecholamine e.g Adrenaline.
 - So, - Heart → ↑ HR
 - Face → Pallor
 - Hand → Tremors.
 - Skin → Sweating.

★ PATHOLOGICAL

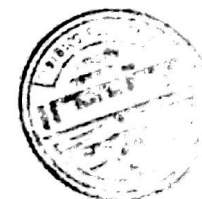
Normally (The gland not felt). If Enlarged → **Goitre**

♦ Aetiology of SNG

1. Iodine Deficiency: may be
 - Absolute [Endemic] as Fayoum.
 - Relative as Pregnancy etc...
2. Goitrogenic drugs may be
 - Anti-thyroid drugs as thiouracil
3. Genetic causes: *Pendred's Syndrome*
Congenital defect of enzymes needed to synthesis of thyroid hormones

♦ Classifications

1. Simple goitre
 - Simple Physiological goitre
 - Simple Colloidal goitre
 - Simple Nodular Goitre SNG**
2. Toxic goitre
 - 1ry or 2ry Toxic Goitre**
 - Toxic Nodule
3. Neoplastic
 - Benign Neoplasm.
 - Malignant Thyroid**
4. Inflammation — as (Hashimoto's Thyroiditis)
5. Congenital: — Cretenoid goitre



I. GOITRE SHEET

★ PERSONAL HISTORY

1. Name
2. Age
 - 1. Toxic goitre → Try between (20 - 30 years) young age.
 - 2. Malignancy above (50 years) old age.
 - 3. Nodular Goitre (SNG) → Any age.
3. Sex
 - Goitre more common in Female.
 - Malignancy more common in Male.
4. Residence (For Endemic area) as Fayoum or Wadi El-Natroun.
5. Occupation (For exposure to Radiation) i.e. Malignancy.
6. Marital status (For Infertility or Impotence) i.e. Toxic goitre
7. Menstrual history (For disturbance) i.e. Toxic goitre.
8. Special habits of medical importance

★ COMPLAINT

- Neck Symptom: Neck Swelling.
- or • Symptoms of Thyrotoxicosis: (See later)
- or • Symptoms of Malignancy: (See later)

★ PRESENT HISTORY

- I. Analysis of complaint (Swelling ± Pain)
- II. Analysis of symptoms related to Part affected
- III. Analysis of symptoms related to Other parts affected

I. Analysis of complaint (Swelling ± pain)

1. O.C.D (Onset - Course - Duration)

2. EXAMS (Swelling)

- Site
- Number
- Investigations & tit
- Associated swelling as (L. Ns metastasis)
- Pain " If present "

1. O.C.D
2. Site
3. Extent
4. Characters
5. ↑ by
6. ↓ by
7. Referred or not

Q: What are causes of painful goitre (See Q: 1)

II. Analysis of symptoms related to Part affected

i.e. Pressure Symptoms - Local Complications

- Trachea → Dyspnea
- Esophagus → Dysphagia but (Rare) why (See Q: 2)
- Sympathetic chain (Horner's Syndrome) - (Ptosis, Myosis, Enophthalmos, Anhidrosis)
Q: Causes of Horner's syndrome? (See Q: 3)
- Internal Jugular vein → Oedema of Eye lid
- Carotid artery → Postural fainting
- Recurrent laryngeal nerve → Hoarseness of voice if Unilateral affection
→ Stridor if Bilateral affection

III. Analysis of Symptoms related to Other parts affected

i.e. General Complications & Search for the cause.

I. Toxic Manifestations

- ☆ Metabolic
 - Loss of weight Inspite of good appetite (Other causes) (See Q: 4)
 - Intolerance to heat.
 - Excessive sweating.
- ☆ C.V.S → Palpitation.
- ☆ Chest → Dyspnea
- ☆ C.N.S
 - Tremors of Tongue & hand
 - Irritability & Insomnia.
 - Weakness of proximal limb muscle.
- ☆ G.I.T → Diarrhea
- ☆ Urinary → Polyuria
Q: causes of Polyuria in This case (See Q: 5)
- ☆ Skeletal → Generalized bone ach.
- ☆ General → Diplopia of eye *(exophthalmos)*
- ☆ Gonadal
 - Impotence in Male
 - Menstrual disturbance in Female.

II. Malignant Manifestations

- ☆ Rapid increase in size Short duration.
- ☆ Pain is related to swelling or Referred to Ear
Q: Why Referred to Ear? (See Q: 6)
- ☆ Metastasis As LBLB (Page 2)
- ☆ Symptoms of Infiltration (See Pressure Symptoms)

★ PAST HISTORY

- Similar condition
- Diseases as DM, hypertension, heart disease etc..
- History of Drug allergy or Goitrogenic drugs as (Thiouracil) Neomercazole
- History of Neck Irradiation To Exclude Risk of Malignancy
- History of Neck operation as Thyroidectomy or L.N biopsy (See Q: 7)

★ FAMILY HISTORY

- Similar condition as in Endemic Goitre
- Cancer Thyroid as Medullary Carcinoma
- (Congenital) Pendred's Syndrome (For Clinical Picture) (See Q: 8)

EXAMPLE OF

THYROID SHEET

★ PERSONAL HISTORY

سعيد كمال الدين Male patient, 48 years old from Giza, He is Shoemaker, Married since 28 years, has 4 children, the youngest is 14 years old, He is heavy smoker 20 cigarettes per day for 30 years, No other special habits of medical importance.

★ COMPLAINT

Diplopia associated with mass at lower part of neck 1 year ago.

★ PRESENT HISTORY

- The Condition is started 1 years ago (with Single swelling at Muscular triangle) by gradual onset & slowly progressive course.
- The Swelling is not painful & Not associated with neck swellings at anatomical site of L.Ns.
- There are No Pressure Symptoms as :
 - Dyspnea, Dysphagia, Postural fainting, Oedema of upper eye lid or Hoarseness of voice.
- There are Toxic Symptoms as :
 - Diplopia (Exophthalmos), loss of weight inspite of good appetite, Intolerance to heat. Excessive sweating, palpitation, Dyspnea, Insomnia and Irritability
- There are No Metastatic Symptoms as :
 - Chest pain, Cough, Haemoptsis, Pain in Rt. hypochondrium, Jaundice, Bone ache, pathological fracture, Headache or Vomiting.
- The patient was admitted to Kasr El Aini hospital & had investigations in form of blood analysis and he was told that the hormonal level is high and received medical treatment in form of Inderal (40 mg t. d. s) & Neomercazole and continues till now.

★ PAST HISTORY

No past history about Recurrency, No DM, No Hypertension, No T.B, No Bilharzias, No Drug allergy, No previous Operations or Biopsy or Neck irradiation.

★ FAMILY HISTORY

No family history of similar condition (Irrelevant).

DIAGNOSIS

Mass at Muscular Triangle most probably
[1ry Toxic Goiter]

II. GENERAL EXAMINATION

A. VITAL SIGNS For normal "See Page 2"

1. Temp (↑) With Toxic goitre.
2. Pulse Rate: (Full comment on Radial pulse) with Toxic goitre it is "Tachycardia, Irregular, large volume, equal on both side & Water hammer pulse as special characters."



Q: Sleeping Pulse means.....

Q: During Exam. Vital sign may be stable because, the patient is

Q: The pulse may be Unequal as in.....

Q: What are other causes of Water hammer pulse? (See Q: 9-12)

3. A.B.P "High Systole and low Diastole"

4. R.R May be Increased

B. GENERAL EXAMINATION (A.B.C.D.E.F) Then Comment "See Page 2"

A = Appearance	→ Ill with Cachexia as in Malignancy. (See Q: 13)
B = Built	→ Under built as in Hyperthyroidism, as Malignancy
C = Conscious	→ Conscious but Apathy as in Hypothyroidism
D = Decubitus	→ Orthopnea as in HF → 
E = Emotion	→ "Irritable & Alert" as in Toxic goitre
F = Face	→ "Staring look" as in Toxic goitre.

C. SYSTEMIC EXAMINATION

I. HEAD

1. Skull: For Swellings as (Bone metastasis). (See Q: 14)
2. Lip: For Pallor & Cyanosis as (Huge Retro-sternal goitre)
3. Mouth: For Ectopic Thyroid.
4. Tongue: For Tremors. N.B Tongue must be unsupported → 
5. Eye For
 - Pallor & Jaundice as (Liver metastasis)
 - Tremors in upper eye lid.

Eye sign (see later)
Exophthalmos

Q: Exophthalmos means.....

Q: Cause of Exophthalmos is.....

Q: What are the causes of unilateral Exophthalmos?

Q: What are the causes of pulsating Exophthalmos?

Q: What is Difference between True or Apparent? (See Q: 15-19)



How To Examine Exophthalmos



1. To show True or False

- (واقف خلف المريض) 1. **Naffziger Test** To see the level of supra & infra orbital ridge with cornea
- (واقف بجانب المريض) 2. **Frazer's Test** To see the obliteration of sulcus of Orbital margin with slight closed eye.
- (واقف بجانب المريض) 3. **Ruler Test** To see the level of supra & infra Orbital margin with cornea by Ruler.

2. To determine the degree

1. Exophthalmometer

2. **Ruler** To measure distance between lateral Orbital and apex of Cornea (Normally = 15-17mm)

How To Examine Eye sign

1. **Stellwag's sign**: Staring look or infrequent blinking (Normally ~ 5 - 8 Times/min)
2. **Von Graefe's sign**: Upper eye lid lags behind when moving the eye downwards
3. **Dalrymple's sign**: A Rim of sclera is seen above the cornea when moving the eye downwards
4. **Joffroy's sign**: Loss of wrinkling of the forehead when Moving the eye upwards.
5. **Mobius sign**: Lack of convergence on looking to near object.



II. NECK: (See Local Examination)

III. UPPER LIMB: For 1. Tremors of hand i.e. Fine For DD from Flapping Tremors (See Q: 20)

2. Pulse
3. Warm hand if Thyrotoxicosis.

N.B. If Cold → Psychoneurosis.

IV. LOWER LIMB: For V (Vein) → Oedema: pitting if HF. → Pre-tibial Myxedema (see Q: 21)

- A (Artery) For Dorsalis pedis pulsation.
- N (Nerve) Hyper-reflexia.

V. CHEST: For 1. Metastasis to chest wall. 2. Mediastinal syndrome (See Q: 22)

VI. ABDOMEN: For 1. Liver Enlargement (See causes Q: 23) 2. Spleen Enlargement (See causes Q: 24)

VII. DON'T FORGET BACK For Metastasis

Thyrotoxicosis

"Hyperthyroidism"

Myxedema

"Hypothyroidism in Adult"

HISTORY:

- | | | |
|--------|---|---|
| M.R | 1. Intolerance to heat
2. Loss of weight
3. Good Appetite | 1. Intolerance to cold
2. Weight gain
3. Loss of appetite |
| CVS | 4. Sense of palpitation | 4. Unaware of heart beats |
| Chest | 5. Dyspnea | 5. Dyspnea |
| CNS | 6. Alert & nervousness | 6. Apathy & lazy |
| GIT | 7. Insomnia
8. Diarrhea | 7. Hypersomnia
8. Constipation |
| Eye | 9. Diplopia or protrusion of eye ball. | 9. Puffiness of upper eye lid |
| Menses | 10. Polymenorrhea or Menorrhagia. | 10. Oligomenorrhea or Amenorrhea |

GENERAL EX:

A. Vital sign

- | | | |
|-------|--------------------|---------------|
| Temp | • Increased. | • Decreased. |
| Pulse | • Tachycardia. | • Bradycardia |
| ABP | • Increased. ↑S/D↓ | • ————— |
| RR | • Increased. | • Decreased. |

B. General

- | | | |
|----------------|------------------------|---------------|
| A = Appearance | • Normal | • Normal |
| B = Built | • Under built. | • Over built. |
| C = Conscious | • Conscious. | • ————— |
| D = Decubitus | • Orthopnea if HF. | • ————— |
| E = Emotion | • Nervousness. | • Lazy |
| F = Face | • Staring look if Iry. | • Apathy |

C. Systemic

- | | | |
|-------------------|--|--|
| Head: | | |
| - Eye | • Tremors.
• Jaundice
• Exophthalmos
• Eye sign
• Tremors. | • Puffiness of upper eye lid
• Loss of hair at outer 1/3 of eye brow. |
| - Tongue | | |
| Abdomen: | | |
| Liver Enlargement | • Auto immune if Iry case | • Thick & protruded
• Fatty liver due to high cholesterol level.
• Dark pale and thick skin
• Hypo-reflexia |
| Upper limb: | • Warm hand | |
| Lower Limb: | • Hyper-reflexia. | |



III. LOCAL EXAMINATION

○ PROPER POSITION

Patient is sitting down & neck is fully extended

N.B. Pizzillo's Method:

If pt. obese with short neck. Ask him to put his hand behind his neck.

○ PROPER EXPOSURE

Whole Head & Neck up to supra-clavicular fossa.

★ INSPECTION N S E D

N — ☆ **Number** Single Swelling

6 S — ☆ **Site** Lower part of front of neck
i.e. Muscular Triangle (Q: What is it?) (See Q: 25)

☆ **Shape** → If diffuse (U shaped or butterfly)
→ If localized (irregular or oval)

☆ **Size** Variable in (cm × cm)

☆ **Surface** → **Smooth** If 1ry Toxic goitre.
→ **Nodular** If → 2ry Toxic goitre.
→ SNG.
→ **Irregular** If Malignancy

☆ **Skin over** → Dilated veins If Retro-sternal goitre.
→ Scars If Previous Thyroidectomy or Biopsy
→ Redness If Inflammation.
→ Infiltration If Malignancy.

☆ **Special sign** → 1. **Pulsation**: may be
• **Expansile** At The upper pole as in 1ry toxic goitre.
• **Transmitted** If over carotid artery.
→ 2. **Move up & down with deglutition as goitre** (See Q: 26-29)
Q: Why Move up & down with deglutition?
Q: When unable to move up & down with deglutition?
Q: Which Swelling moves up with protrusion of Tongue?
Q: What other swellings move up & down with deglutition?

E — ☆ **Edge**: (Better seen with deglutition) well defined or not.
• We comment on lower pole seen or not. To Exclude Retro-sternal extension.

3 D — ① **Deep structure**:

• By lowering head against resistance then look to swelling's size.
→ If smaller → Deep to muscle.
→ If same size → Infiltrate the muscle i.e. malignancy.

② **Draining L.Ns** "For metastasis" See chapter (12)

③ **Distal Effect: (Only)** if Retro-sternal goitre

Tilting of head to one side for 1/2 minute, leads to → Face Flushing = +ve R.S.E.

INSPECTION with EXTENDED NECK



★ PALPATION

• Palpation of Thyroid gland from **behind**

TMSEC D

3 T — ☆ **Temp** Warm as in Toxic goitre.
☆ **Tenderness** Tender as in Malignancy.
☆ **Thrill** At upper part as in Toxic goitre.

M — ☆ **Mobility**

(Grasp whole swelling to show mobility in 2 directions)
1. Side to side on trachea. (**Rocking**)
Then 2. Up & down

6 S — ☆ **Site, Shape, Size, Surface** [As **Inspection**]

☆ **Skin over** (attached to skin not) by:
1. **Pinching skin**: from swelling.
2. **Sliding the skin**: over the swelling.
3. **Push swelling under skin**: If puckering = infiltrated skin. i.e. malignancy.

☆ **Special sign** [As **Inspection**]

E — ☆ **Edge** Well defined or ill defined

C — ☆ **Consistency**: may be

1. **Hard** as in Malignancy or Calcified SNG. (See Q: 30)
2. **Firm** as in 2ry Toxic goitre or SNG.
3. **Soft** in 1ry Toxic goitre or Physiological goitre

3 D — ① **Deep structure**:

1. **Muscle**: (Sternomastoid) by pinching the muscle from swelling.
2. **Carotid vessels** (Common carotid pulsation)
Q: What is the normal anatomical site of carotid artery? (See Q: 31)
May be → a. Displaced carotid pulsation as in Benign Lesions
→ b. Absent carotid pulsation (i.e. **Berry's sign**). As in malignancy.
3. **Trachea**: central or not.

② **Draining L.Ns** upper & lower deep cervical L.Ns See chapter (12)

Q: what is the 1st. LN felt clinically in Malignancy? (See Q: 32)

③ **Distal Effect: [Kocker's test]**

• Slight compression on lateral lobes produce Stridor. It means Tracheomalacia
Q: What is the value? (See Q:33)

★ PERCUSSION

• **Direct percussion** on Manibrium sterni is **normally Resonant**.

If **Dull** → Retro-sternal goitre

Q: What are other causes? (See Q:33)

★ DISCUSSION

• A **Systolic Murmur** may be heard over upper pole
i.e. Thyroid bruit as in 1ry Toxic goitre

PALPATION with FLEKED NECK



IV. DIAGNOSIS

During Exam. We Suspect The Following Clinical cases

1. Toxic Goitre (1ry or 2ry)
2. Malignancy.
3. Simple Nodular Goitre (SNG)



So For Diagnosis We Must Exclude

1. Manifestation of Toxicity i.e. Toxic goitre

For D.D between 1ry and 2ry

1ry	2ry
• Grave's (Basedow's) Disease • Symmetrical • Soft and Smooth • Young (20-30 years) • The Mass at same time of Toxicity • Eye sign.	• Plummer's Disease • Asymmetrical. • Firm and nodular. • Middle (30-50 years) • The Mass before time of Toxicity • No eye sign. (Extreme rare)

2. Manifestation of Malignancy

1. Swelling is "**THIEF**" !! **Tender, Hard, Irregular, Enlarged & Fixed.**
2. "**Berry's Sign**" (Absent carotid pulsation)
3. **L.Ns** (Enlarged, Hard, 1st mobile Then Fixed)

3. By Exclusion of 1 & 2

The case is **SNG**

Q: What are its complications? (See Q: 35)

V. INVESTIGATIONS

1. Thyroid Function Test as **level of T3 & T4**
2. Radioactive Iodine study.
3. **US**
4. **Biopsy**



TREATMENT OF GOITRE



★ TOXIC GOITRE

⊗ **Treatment:** "See Notes" for 6th year

	1ry	2ry	Toxic goitre
★ Medical treatment	All cases.	As preoperative	-----
★ Surgical treatment	- Failure of med. treatment - Recurrent - Huge in size	Main treatment	Hemi-thyroidectomy
★ I₂ Radiotherapy	IF pt. > 45 years	-----	IF pt. > 45 years

★ MALIGNANCY

⊗ **Treatment:**

Operable	Inoperable
As In → Papillary carcinoma. → Follicular carcinoma.	As In → Anaplastic carcinoma. → Papillary or Follicular but with Infiltration of vital structures.
⊗ Total Thyroidectomy: → Preservation of at least one of Parathyroid gland. → Followed by postoperative ¹²⁵I scan as diagnostic	⊗ Palliative Isthmusectomy. ⊗ According to Types: → Papillary → Give L. thyroxin. → Follicular → Give I₂ uptake. → Anaplastic → Give Ext. Radiation ⊗ Treatment of complications as → Tracheostomy If Tracheal invasion → Gastrostomy If Oesophageal invasion.

★ SIMPLE NODULAR GOITRE (SNG)

⊗ **Treatment**

- **For single** → Lobectomy & Isthmusectomy
- **For multiple** → Subtotal Thyroidectomy

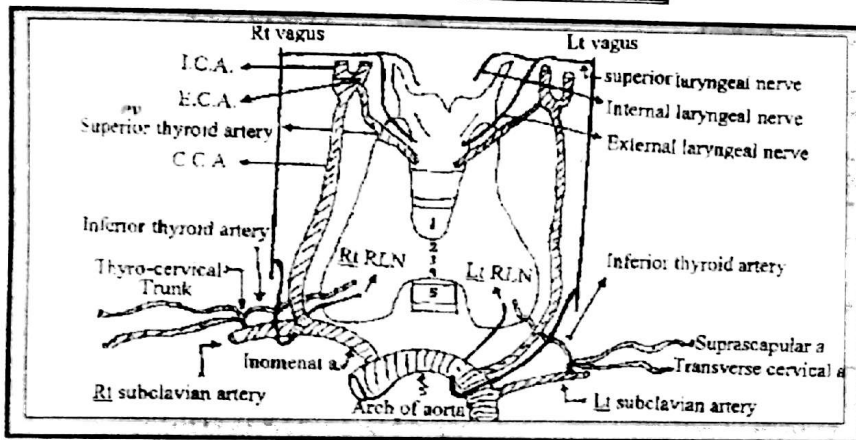
N.B.

1. "We leave Postero-medial part."
2. All operation followed by L. thyroxin 0.1 - 0.2 mg/d until menopause to avoid recurrence.

ORAL DISCUSSION

GOITRE

QUESTIONS OF ANATOMY



Q: Which Artery related to upper pole of Thyroid gland?

☆ Superior Thyroid artery from External carotid artery.

Q: Which Artery related to lower pole of Thyroid gland?

☆ Inferior Thyroid artery from Thyro-cervical Trunk

Q: Which Nerves related to Thyroid gland?

At Upper pole

External Laryngeal Nerve

From Superior laryngeal nerve from Vagus

So during Thyroidectomy we ligate vessels near their upper end to avoid its injury.

At Lower pole

Recurrent Laryngeal Nerve

From Vagus [the course is changed from Rt & Lt]

So during Thyroidectomy we ligate vessels far as possible from lower end to avoid its injury

Q: Is Rt. Recurrent Laryngeal Nerve with same anatomy of Lt one?

No • Rt. Recurrent laryngeal n. hooks around Rt. Subclavian artery.

• Lt Recurrent laryngeal n hooks around Arch of the aorta.

Q: What Is the Incidence of Non Recurrency of RLN?

☆ The incidence 0.6% & usually on the Rt side.

Q: What are the contents of Carotid sheath?

• **Upper level:** N = Vagus V = IJV A = I.C.A. internal carotid artery
• **Lower level:** N = Vagus V = IJV A = C.C.A. Common carotid artery

Q: What is the Anatomical site of an Isthmus?

☆ At Tracheal Rings 2,3,4

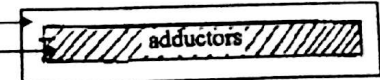
RECURRENT LARYNGEAL NERVE

adaptation or adjustment

It is responsible about Co-aptation of vocal cord so produce Voice.

For inspiration Complete Abduction of cords is needed.

R.L.N. has outer fibers for Abductor muscles and has Inner fibers for Adductor muscles.



So With R.L.N Injury :

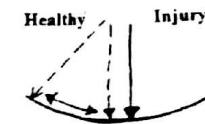
a. In partial injury → Adductors only are acting
So cords in midline

b. In complete injury → Abductors & Adductors are paralysed so cords placed mid way = Cadaveric position

So The Effect of Injury of R.L.N as follows :

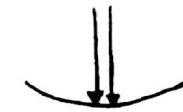
(A) Unilateral Partial:

☆ *Dyspnea on Exertion.*



(B) Bilateral Partial:

☆ *Stridor & Suffocation.*



(C) Unilateral Complete:

☆ *Hoarseness of Voice.*



Unilateral cadaveric

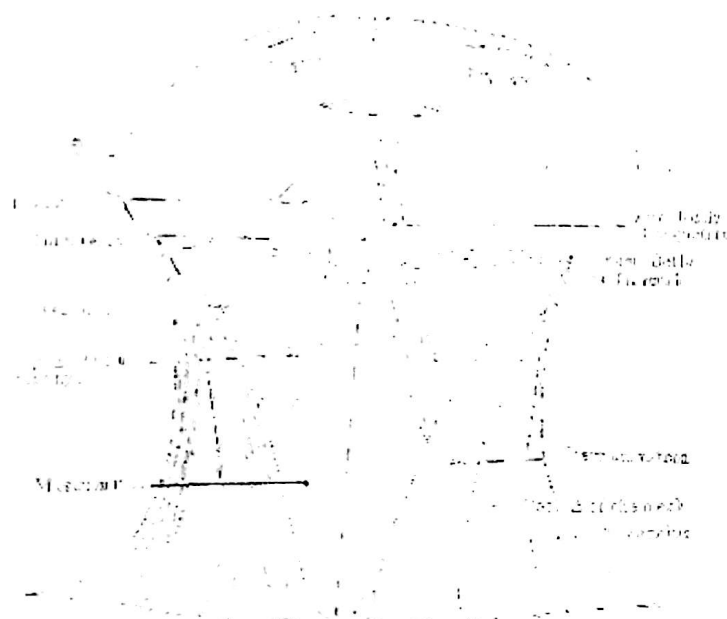
(D) Bilateral complete

☆ *Aphonia*



Bilateral cadaveric.

↑ TRIANGLES of The NECK



The Neck has 7 Triangles Anteriorly & 2 Posteriorly Triangles

THE 7 ANTERIOR TRIANGLES

1. **1 Sub-mental Triangle:** Between the 2 Anterior bellies of Digastric muscle & the body of hyoid bone.
2. **2 Muscular Triangles:** Between the Anterior midline of the neck, Superior belly of Omohyoid muscle and the lower part of the Anterior border of Sternomastoid.
3. **2 Digastric Triangles:** Between the Anterior & Posterior bellies of the Digastric muscle and the lower border of the mandible.
4. **2 Carotid Triangles:** Between the Superior belly of Omohyoid muscle, Posterior belly of Digastric muscle and the Upper part of the Anterior border of Sternomastoid muscle.

THE 2 POSTERIOR TRIANGLES

Between Posterior border Sternomastoid muscle, Anterior border of the Trapezius muscle & middle 1/3 of clavicle

Questions on Sheet

Q1: What are the causes of Painful goitre?

- Malignancy, Acute Thyroiditis & Hge in cyst

Q2: Why is Dysphagia as pressure symptom being Rare?

- ☆ Because Esophagus is a muscular tube.

Q3: What are other causes of Horner's syndrome?

- **Compression** by Goitre, Pan-cost tumor & Carotid aneurysm.
- **Complication** after Cervical sympathectomy.
- **Injury** of lower part of brachial plexus.

Q4: What are the causes of loss of weight inspite of good appetite?

- Toxic Goitre.
- Uncontrolled D.M.
- Parasitic infestation (Hydatid cyst)
- Mal-absorption syndrome.

Q5: What are the causes of Polyuria in case of toxic goitre?

- ↑ Metabolic H_2O
- Intake of water 2ry to Polyphagia
- Glucosuria.
- ↑ Renal blood flow

Q6: Why is Pain in Malignancy of Thyroid referred to Ear?

- ☆ Because of Ear has same dermatomal supply i.e. Arnold nerve

Q7: What are the types of biopsy done in case of goitre?

- FN AC, True cut biopsy & Excisional biopsy.

Q8: What are symptoms of Pendred's syndrome?

- Goitre, Dwarfism & Deafness.

Questions on General Exam.

Q9: What is meant by Sleeping pulse?

- ☆ It is clinical confirm of rapid pulse even during sleep so it Excludes Anxiety

Q10: Why Vital sign stable in case of Toxicity during Examination?

- ☆ Because, the patient under treatment e.g. Indral

Q11: What is the cause of unequal pulse in case of goitre?

- ☆ If Retro-Sternal Extension (R.S.E)

Q12: What are other causes of water hammer pulse?

- Thyrotoxicosis.
- AR
- Anæmia
- Hypoxic cor-pulmonale
- Hepatic failure
- A.V fistula

Q13: How can you diagnose under built?

- Prominent Maxilla & Zygoma
- ↓ Muscle bulk.
- ↑ Fold of skin at Biceps & Triceps muscles.

Q14: Which type of malignancy characterized by Bone metastasis?

- Follicular carcinoma

Q15: What is meant by Exophthalmos?

- Actual protrusion of Eye ball.

Q16: What is the cause of Exophthalmos?

- Unknown but may be E.P.S. (Exophthalmos Producing Substance)

Q17: What are the causes of Unilateral Exophthalmos?

- Orbital Cellulites.
- Orbital Neoplasm.
- V → Cavernous Sinus Thrombosis.
- A → Orbital Aneurysm i.e. Ophthalmic artery.
- A → A-V Fistula between (ICA & Cavernous sinus)
- N → Neurofibromatosis of Optic Nerve.

internal carotid artery

Q18: What are the causes of Pulsating Exophthalmos?

- Orbital Aneurysm & A-V Fistula between (ICA & Cavernous sinus)

Q19: What is the Difference between True & Apparent?

- True Exophthalmos = Actual protrusion of Eye ball.
- Apparent Exophthalmos = Upper Eye lid retraction.

Q20: What is DD between Fine & Flapping Tremors?

- Fine Tremors : Due to ↑ Metabolites → Irritation of Nerve ending → Tremors of small joints of hand.
- Flapping Tremors : Due to ↑ Toxins → Irritation of Extra-pyramidal A → Tremors of wrist joint of hand

Q21: What is meant by Pre-tibial Myxedema?

- It is due to deposition of mucin at skin.
- Associated with Clubbing fingers & Toes

Q22: What is meant by Mediastinal syndrome?

- Dyspnea, Congested Neck veins, Brassy Cough

Q23: What are the causes of Liver Enlargement?

- Thyro-toxic HF.
- Auto-immune [Iry Toxic goitre & Hashimoto's Thyroiditis]
- Thyroid Lymphoma.
- Liver Metastasis.

Q24: What are causes of Spleen Enlargement?

- Auto-immune [Iry Toxic & Hashimoto's Thyroiditis]
- Thyroid lymphoma.

bursa = is a fluid filled sac located between a bone and tendon which normally serves to reduce friction between the two moving surfaces.

Questions on Local Exam.**Q25: What is meant by Muscular Triangle?**

- It is Called "Muscular A" because it Contains
 - Sterno-hyoid muscle.
 - Sterno-thyroid muscle.
 - Thyro-hyoid muscle.
 - Omohyoid muscle.

Q26: Why Goitre moves up & down with deglutition?

- Because it is included in Pre-tracheal fascia.

NB. Attachment of Pre-tracheal fascia

- Above : Oblique line of Thyroid cartilage & Hyoid bone
- Below : Superior Mediastinum.
- On each side : Carotid sheath.

Q27: When Goitre unable to moves up & down with deglutition?

- Malignancy
- Huge in size.
- Retrosternal extension (R.S.E.)
- Riedel's Thyroiditis (due to fibrosis)

Q28: Which Swellings moves up with protrusion of tongue?

- Thyroglossal cyst.
- Sub-hyoid bursitis.

Q29: What are other Swellings move up & down with deglutition?

- Goitre.
- Thyroglossal cyst.
- Pre-tracheal L.Ns
- Pre-laryngeal L.Ns.
- Sub-hyoid bursa.
- Laryngocele.

Q30: What are the causes of Hard goitre?

- Malignancy.
- Calcified SNG.
- Riedel's Thyroiditis
- Tense cyst.

Q31: What is the Anatomical site of Carotid artery?

- It felt Against carotid tubercle of C₆.

Q32: What is the 1st L.Ns felt Clinically in Malignancy?

- Pre-laryngeal L.Ns

Q33: What is the value of Kocker's test?

- The value is preoperative consent (from patient) for Tracheostomy

Q34: What are the causes of dullness on Manibrium sterni?

- Retrosternal Goitre.
- Ectopic Thyroid Tissue.
- Pre-tracheal L.Ns.

Q35: What are the complications of SNG?

- Carcinoma "Follicular type 3%"
- 2ry toxic goitre.
- Calcification.
- Hge m cyst.
- Retrosternal Extension.

Questions on Management

Q36: When do you Contraindicate Anti-thyroid drugs in the preoperative preparation?

✧ In Retro-sternal goiter

Why?

✧ Because Anti-thyroid drugs cause enlargement of the thyroid gland which may lead to Mediastinal syndrome.

Q37: How can you Prepare Retrosternal Toxic Goiter?

✧ β -blockers e.g Propranolol (Inderal)

Q38: Can the Cervical L.Ns. develop 2ries from a Thyroid carcinoma while the 1ry is not felt clinically?

✧ Yes, in occult papillary carcinoma of the thyroid gland. This was thought in the past as some form of Ectopic thyroid gland and was called "lateral aberrant thyroid".

Q39: Is Cancer Thyroid Hormone dependent or not?

✧ Yes, especially papillary. It depends on TSH stimulation.

Q40: What are The Hormone dependent Tumors?

• Thyroid, Breast & Prostate.

Q41: Why Radioactive Iodine is not indicated in Toxic nodular goiter?

✧ Because it is ineffective due to fibrosis present in the gland.

Q42: What is the Amount of the Thyroid gland to be left in subtotal Thyroidectomy for SNG?

✧ An Amount equal to 4 grams on each side.

Q43: What is the Amount of the Thyroid gland to be left in subtotal thyroidectomy for Toxic nodular goiter?

✧ An amount equal to 2 grams on each side.

Q44: What is the danger of Haematoma after Thyroidectomy?

✧ It can lead to suffocation as it is enclosed within the pre-tracheal muscles.

Q45: How do you Treat it ?

✧ First, urgently, while the patient is in bed, the sutures are cut to relieve the tension and the patient is taken to the theater to deal with the bleeder.



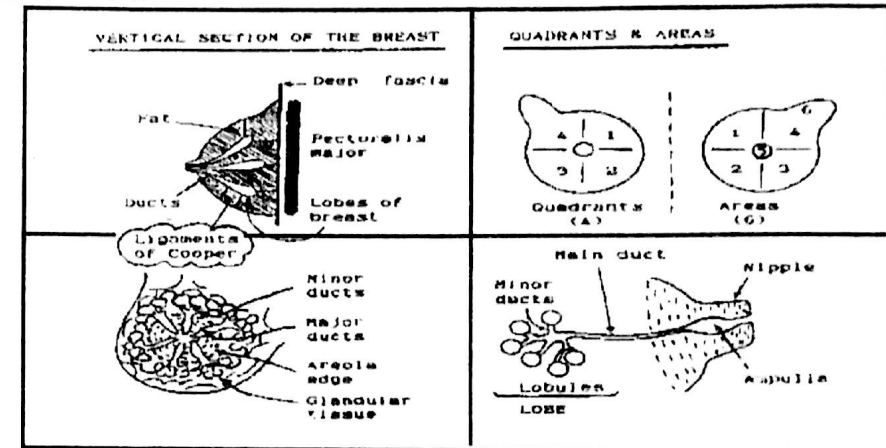
Good luck

Breast Sheet



GAD Day

Chapter 4

BREAST CASE**INTRODUCTION**★ **ANATOMICAL**★ **PATHOLOGICAL "Diseases of the Breast"**

1. **Inflammation:** (Acute, Chronic Mastitis)
2. **Mammary Dysplasia [ANDI]:** Fibroadenosis
3. **Benign Tumors:** Duct Papilloma, Fibroadenoma.
4. **Malignancy:** Cancer Breast

1. **INFLAMMATION**

A. **Acute** The most common type is "Acute Bacterial Mastitis"

C/O **General:** (F.H.M.A)

Complaints of **Local:** Dull ach pain

[N.B If suppuration occur] As above but **Fever** become **Hectic** and **pain** is **Throbbing** with **purulent** discharge. i.e. **Breast Abscess**

Exam: Tenderness, Hotness, Redness and Tense + Non specific L.Ns (Firm & Tender)

B. **Chronic**

* **Non specific** → It is very difficult to differentiate it from cancer.
→ History of Acute abscess.

* **[Mammary Duct Ectasia]** → It is very difficult to differentiate it from cancer.
(Plasma Cell Mastitis) → **Green paste** discharge.
→ No history of Acute abscess.

fluctuating but persistent

2. MAMMARY DYSPLASIA Fibroadenosis

Age After puberty & Before menopause.

- C.O. **Pain** ✓✓✓ → dull ache. ↑ before, ↓ after menses
N.B. This pain stop with pregnancy
- Discharge** → serous, green or dark.
- Mass** → Painful and Fixed to breast tissues.
 → Away from Areola

- Exam. **Tender** Firm as if Fine nodules by **Tips of Fingers**
- Discharge** → By patient herself.
- Mass** → Away from the Areola.

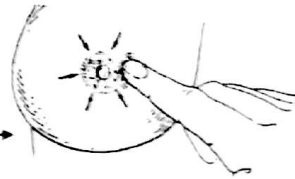
3. BENIGN TUMORS

A. Duct Papilloma

Age 30 - 40 years

- C.O. • **Bleeding per nipple**
 • Retroareolar mass i.e. Retention cyst.

- Exam. • Retro-areolar mass
 • Localize the duct by palpation of each quadrant →



B. Fibroadenoma

	Hard	Soft
Age	20 - 30 years	30 - 40 years
C.O.	☆ Firm , painless mass. ☆ Slow Rate of growth. i.e. malignancy is Rare	☆ Soft painless mass. ☆ Rapid Rate of growth i.e. malignancy is common
Exam.	☆ Firm not tender. ☆ Well defined edge ☆ Mobile (Breast Moves) ☆ No L.Ns Enlargement.	☆ Soft not tender.
Treatment	Excision biopsy	☆ Small : Excision Biopsy ☆ Large : Simple Mastectomy

4. MAMMARY CANCER = Cancer Breast

Age 40 - 60 years + Risk factors

- C.O. • **Hard** painless mass, **Discovered Accidentally**
 • **Rapid** Rate of growth.
 • **Discharge** - **Blood** → Duct carcinoma.
 - **Necrotic crystals** → Degenerating carcinoma.
 • **Skin Manifestation** (7) (See later)
 • **Metastasis** (L.R.L.B.) (See page 2)



Exam. * Breast

- **Hard not Tender** mass.
- Circumscribed edge i.e. (Hard mass in soft breast)
- Fixed to skin & chest wall
- L.Ns enlarged, hard 1" mobile then Fixed.

* Skin Manifestations: (7)

1. Dimpling & Puckering
2. Nipple Retraction & Deviation
3. Peau d' orange "**Pitted Oedema**"
4. Cancerous skin nodules.
5. Cancer on cuirasse
6. Ulceration & Fungation.
7. Paget's disease i.e. malignant eczema

*Retraction of nipple seen in breast cancer
 (Intraepithelial spread & malignant cells)*

Paget's	Dermatitis
• Old Female. • Unilateral. • Erosion. <i>Yes</i> • No (Itching oozing) • Associated with carcinoma	• Young female • Bilateral. • No Erosion. • Present. • Associated with breast abscess

ORAL DISCUSSION

Very Important

I. Swelling of Breast

1. **D.D from "Hard" Swellings:**
 - ☆ Traumatic Diseases.
 - ☆ Cancer Breast.
 - ☆ Chronic Breast Abscess.
 - ☆ Mammary Duct Ectasia
2. **D.D from "Firm" Swellings:**
 - ☆ Fibroadenosis.
 - ☆ Hard Fibroadenoma.
3. **DD from "Cystic" Swellings:**
 - ☆ Duct papilloma i.e. Retention cyst.
 - ☆ Cyst of Bloodgood (**Fibroadenosis**)
 - ☆ Acute Abscess.
4. **DD from "Soft" Swellings:**
 - ☆ Soft Fibroadenoma
 - ☆ Cysto-sarcoma Phyllodes

II. Abnormal Discharges from Nipple

- | | |
|-------------------------|-------------------------------------|
| 1. Purulent discharge | → Breast Abscess |
| 2. Green past | → Mammary Duct Ectasia |
| 3. Serous, green, brown | → Fibroadenosis |
| 4. Blood | → Duct Papilloma or Duct Carcinoma. |
| 5. Necrotic crystals | → Degenerating Carcinoma. |
| 6. Milky | → Galactocele. |



III. Pain of Breast

1. **From Breast**
 - ☆ Breast Fibroadenosis (4-4) or Mastodynia
 - ☆ Bacterial mastitis or acute breast abscess.
 - ☆ Carcinoma is painless **except** → **Advanced**
 - Infected
 - Mastitis Carcinomatosa
2. **Referred pain**
 - ☆ Angina Pectoris
 - ☆ Intercostal neuralgia.
 - ☆ Diseases of bone, muscle and pleura

I. BREAST SHEET



* PERSONAL HISTORY

1. Name

2. Age

1. Fibroadenosis → After Puberty or Before Menopause.
2. Hard Fibroadenoma → 20 - 30 years.
3. Soft Fibroadenoma & Duct Papilloma → 30-40 years.
4. Carcinoma of Breast → 40 - 60 years.

3. Sex → Carcinoma more common in Female than Male.

4. Residence → Highest incidence in (U.S.A) } i.e. Malignancy
 → Lowest incidence in (Japan)

5. Occupation (For exposure to Radiation) i.e. Malignancy.

6. Marital status → Patients Married or not, Having children or not, Lactating or not
 i.e. [Unmarried, Nullipara or Non lactating Female] leads to
 → ↑ Risk of malignancy
 (See Q:1) → Uses of Contraceptive pills for long duration leads to
 → ↑ Risk of malignancy.

7. Menstrual History → Early menarche (< 15 years) or Delayed menopause (> 50 years) leads to → ↑ Risk of Malignancy.

8. Special habits of medical importance.

* COMPLAINT → Painless lump → Benign Tumors, Carcinoma or Chronic Abscess
 → Painful lump → Fibroadenosis or Acute Abscess

* PRESENT HISTORY

- I. Analysis of Complaint (Swelling ± Pain)
- II. Analysis of Symptoms related to Part affected
- III. Analysis of Symptoms related to Other Parts affected

I. Analysis of complaint (Swelling ± Pain)

1. O.C.D (Onset - Course - Duration)

2. PAINS

- * Site (laterality & side) size, leucy, orange
- * Number
- * Investigations & tit
- * Associated swelling as (L.Ns metastasis)
- * Pain " If present "

1. O.C.D
2. Site
3. Extent
4. Characters
5. ↑ by
6. ↓ by
7. Referred or not

II. Analysis of symptoms related to Part affected

1. * i.e. Pressure Symptoms of (Upper limb) = Axillary L.Ns enlargement

- V * Vein = Oedema
- A * Artery = Color changes and claudication pain.
- N * Nerve = Sensory changes

* **Don't Forget:** (ASK about, changes of the Nipple) 6 D

1. Discharge (side, character, color)
2. Deviation
4. Discoloration
5. Dermatitis

3. Destruction (Paget's)

6. Depression (Retraction)

Q: What are Causes & Types of Nipple Retraction? (See Q: 2)

III. Analysis of Symptoms related to Other Parts affected

i.e. General complications

* Acute Inflammation → F.H.M.A. (See Page 2)

* For Metastasis → L.B.L.B (See Page 2) to Exclude Malignancy

* PAST HISTORY

- * Similar condition * Drug (history, intake) * Blood test history
- * Diseases as DM, hypertension, heart disease etc..
- * History of drugs intake as prolonged use of Contraceptive Pills
- * History of Breast Irradiation
- * History of Breast operations as Biopsy or Trauma
- * History of Benign lesion or cancer (Endometrium or Colon)

Types of biopsy:

1. FN AC.
2. Frozen.
3. Paraffin.
4. Excisional.

* FAMILY HISTORY * Similar condition * Consanguinity

* To exclude familial tendency as "Cancer Breast"

EXAMPLE OF

BREAST SHEET

* PERSONAL HISTORY

House wife, married since 35 years, has 5 children. The youngest 15 years old. The Menstrual history: Menarche (13 years) and Menopause (48 years). No special habits of medical importance.

* COMPLAINT

Painless swelling at Lt. Breast 13 years ago.

* PRESENT HISTORY

- The Condition is started 13 years ago (after lactation of her last girl) by Acute onset and progressive course
- The Condition was associated with (Fever, Lt. Axillary L.Ns & Purulent discharge)
- The Patient was admitted to hospital & was investigated by Aspiration & Soft tissue mammography and then surgical excision was done.
- But similar condition occur 2 year after that, she was advised to do another excision but she refused and treated by Antibiotics
- All symptoms disappeared Except this painless mass.
- No Nipple Abnormalities as (Deviation, Discoloration, Discharge...)
- No Skin Manifestations as (Dimpling, Puckering, Peau d'orange)

- No pressure manifestations at upper limb: as color changes, oedema, Tingling, numbness.
- No History of Trauma.
- No Metastatic manifestations

★ PAST HISTORY

There was similar condition, she is diabetic, No hypertension, No T.B, No Bilharziasis, there was history about hepatitis with past history of pain in Rt. hyperchondrium & Jaundice, No drug allergy, No previous operations or biopsy. Oral contraceptive pills was taken, but advised to stop them as they not metabolized by diseased liver.

★ FAMILY HISTORY

No family history of similar condition (Irrelevant)

DIAGNOSIS

Hard painless mass of Breast most probably Chronic Breast Abscess

II. GENERAL EXAMINATION

★ **VITAL SIGNS** Vital signs "See Page 2"

B. **GENERAL EXAMINATION** (A,B,C,D,E,F) "See Page 2"

C. **SYSTEMIC EXAMINATION** "Aim is Looking for metastasis"

Q: What is meant by occult carcinoma? (See Q: 3)

I. **HEAD:** 1. Skull: For bone metastasis

2. Lip: For Pallor & Cyanosis i.e. (Mediastinal L.Ns Enlargement)

3. Eye: For Pallor & Jaundice i.e. (liver Metastasis)

II. **NECK:** 1. Supra-clavicular L.Ns "Virchow's gland" Why? (See Q: 4)

2. Congested Neck Veins "Mediastinal L.Ns enlargement". (See Q: 5)

III. **UPPER LIMB:** 1. Pulse "If weak volume" means (Axillary L.Ns Enlargement)

2. Weakness of Muscle or Sensory Changes or Oedema.

IV. **LOWER LIMB:** For Oedema

V. **CHEST:** For Metastasis to chest wall.

VI. **ABDOMEN:** For

1. Liver Enlargement, (liver)
2. Umbilical Nodules (Sister Joseph)
3. Malignant Ascites

VII. **DON'T FORGET BACK** For Metastasis

E.B. PR & PV examination to detect pelvic deposits,

• Malignant Nodules

• Krukenberg's Tumors

rapidly malignant growth in one or more ovaries metastatic from adenocarcinoma of stomach or intestine.

III. LOCAL EXAMINATION

▷ PROPER POSITION

① Sitting Position → For Inspection & Palpation.

② Lying Position → For Palpation only.

▷ PROPER EXPOSURE

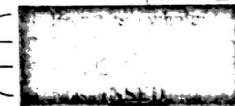
- The upper half of body is completely naked to the umbilicus (Back & shoulder covered with blanket)

- Umbilicus is exposed
- UL exposed (axillary L.Ns)

★ INSPECTION

"Patient is Sitting only"

For



I. Breast as a whole

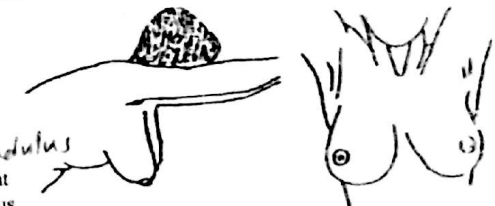
☆ Level: (By Comparing) Elevated or at Lower level.

☆ Shape: Normal or Distorted.

☆ Size: Shrunken or Enlarged.

☆ Mobility:

- Ask patient to bend forward, and note the degree of breast protrusion & pendulous
- Ask patient to raise the arms up, so that deformity lump or dimple more obvious.



Don't Forget

- Elevation, Shrinkage, Deficiency of protrusion on bending forward & increase deformity on raising the arm → sign of fibrosis

Q: Which diseases are occurred? (See Q: 6)

2. Nipple (Comparing both side)

☆ Destruction: e.g. Erosion as in Paget's disease

☆ Depression (Retraction) (See Q: 7) discoloration

☆ Direction: Normally = (Downward and Laterally)

☆ Discharge يطلب من المريض



3. Areola (Comparing both side)

☆ Color (Pink in virgins and brown after pregnancy)

Q: Is the colour dark with fibrosis or not? Why? (See Q: 8)

☆ Surface (Eczema) → redness & vesicle formation

☆ Size: Increase in pregnancy

☆ Shape: Normally Rounded & Irregular with fibrosis

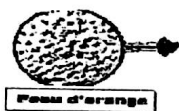
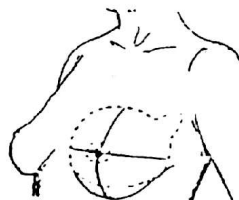
5. Mass: (NSD)

40 skin pigmentation dilated veins
ulcer scars & ink signs
- dimpling
- Peau d'orange

4. Mass: (NSED)

N — ☆ **Number** → Usually Single6 S — ☆ **Site** → The upper outer quadrant is the commonest site for carcinoma. (See Q: 9)☆ **Side** → Rt or Lt (See Q: 10)☆ **Shape** → Round or oval or irregular☆ **Size** → in (Cm×Cm)☆ **Surface** → Smooth In benign lesion
→ Irregular In Malignancy☆ **Skin over** → Sign of Inflammation.
→ Redness & Shiny
→ Sign of Malignancy.
→ Skin Manifestations.

The 7 Areas

E — ☆ **Edge**: very difficult to be seen by palpation.3 D — ☆ ① **Deep to Mass**: ???
i.e. under-surface of breast.② **Draining L.N.s**

Axillary & supraclavicular L.N.s at the same side & other side See Chapter (12)

③ **Distal Effect: (Upper limb)**For Wasted muscle, Oedema & Deformity
(If Axillary L.N.s enlargement)★ **PALPATION** "Patient is Sitting then Lying down"

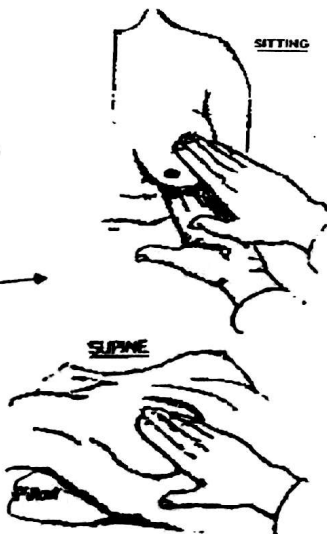
For

1. **Breast as a whole** (الترتيب مهم)

1. Palpate both breast but normal one is 1st
2. Sitting 1st then supine.
3. By flat of hand (palmar surface of fingers) 1st then (عند الطلب) bimanual

N.B. **Palpation done in 7 areas**

- Four Quadrants
- Sub-areolar region = Retro-areolar.
- Under-surface of breast
- Axillary Tail (لازم ترفع ايدها)

3. **Mass: (TESCR)**

T — ☆ **Temp** → Hotness as in Inflammation. *بظهر اليد*
 ☆ **Tenderness** → Tender as in Fibroadenosis, Inflammation *بسطح اليد و غير حادة للبرص*
 → Non Tender as Hard Fibroadenoma or Cancer breast.

E — **Edge** May be *حركة بحسب اليد*
 • Well Circumscribed as in Benign Tumors.
 • Ill Circumscribed as in Carcinoma.
 (See Q: 11)

S — ☆ **Site, Side, Shape, Size** [As Inspection]

☆ **Surface** • Smooth → Benign lesion.
 • Irregular → Malignancy.

Also under surface of mass (at undersurface of the breast).

- Rounded → Benign lesion.
- Flat → Carcinoma (See Q: 12)

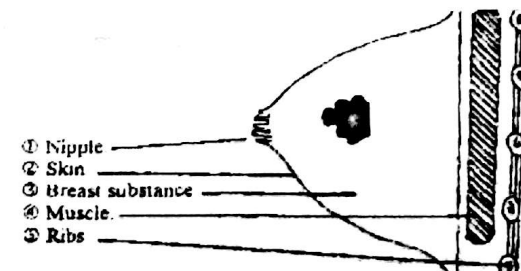
☆ **Skin over**

- By pinching up the skin or sliding the skin or moving the mass under skin.
- If Infiltrated = Puckering → Cancer Breast.

C — **Consistency:** *حركة بالاندر بيد*

- Cystic: Acute Abscess (How to examine it?) *حركة بالاندر بيد*
- Firm: Fibroadenosis or Hard fibroadenoma *like lobule of ear*
- Hard: Cancer breast or Chronic Breast Abscess *like ear pinna*
- Soft: Soft Fibroadenoma. *like bone*

277
 — **Fluctuation Test** if superficial.
 — **Paget's Test** if deep. 277

R — **Relation:**

Don't Forgets

- ① **Fibroadenosis**: Fixed to Breast tissue & Away from Areola.
- ② **Duct Papilloma**: Retro-areolar mass.
- ③ **Hard Fibroadenoma**: Mobile not Fixed i.e. Breast Mouse.
- ④ **Cancer Breast** • Fixed mass Infiltrating the surrounding.
 • Skin manifestation

1. Relation to Nipple

- By holding the Nipple with one hand and moving the mass away from it by other hand.
- If Retro-areolar → Duct Papilloma

2. Relation to Skin

- By pinching up the skin or sliding the skin or moving the mass under skin or patient raise her arm
- If Infiltrated = Puckering → Cancer Breast.

3. Relation to Breast substance

- By holding the breast with one hand and moving the mass within it by other hand.
- If Mobile → Hard fibroadenoma i.e. Breast Mouse
- If Fixed & Away from Areola → Fibroadenosis

4. Relation to Muscle (Breast overlies 3 Muscles)

(A) Pectoralis Major

- Ask the patient to put her hands relaxed in the waist and show → Mobility of mass.
- Then: Ask the patient to press her hands against waist and show → Mobility of mass.
- Results: Limited mobility = Infiltration.

Relations to

Pectoralis Major Muscle



(B) Serratus Anterior

- For mass in lower Outer quadrant
- Ask patient to put her outstretched hands relaxed on your shoulder or wall then show → Mobility of mass.
- Then: Ask the patient to press against your shoulders & show → of mass.
- Results: Limited mobility = Infiltration.

Relations to

serratus Anterior Muscle



5. Relation to Ribs

- Moving the lump while the patient is Relaxed. *Fixed & Immovable from the start.*
- If Absent mobility this means Ribs infiltration

V. INVESTIGATIONS

1. The most important is Soft Tissue Mamography.
2. U/S to DD Cystic from Solid.
3. Biopsy.

IV. DIAGNOSIS

- Chronic Breast Abscess.
- Fibroadenosis.
- Fibroadenoma.
- Breast Carcinoma.



ORAL DISCUSSION

BREAST

Questions on Sheet

Q1: What are the Risk factors of Malignancy?

- Early Menarche < 15 years.
- Late Menopause > 50 years.
- Female get 1st pregnant > 30 years.
- Female with Cancer to near relatives.
- Female with Cancer of one breast
- Female with History of benign lesion.
- Relations to Prolonged use of Oral contraceptive pills.
- Relations to Atypical Hyperplasia
- Relations to [Carcinoma of Colon or Endometrium]
- Female Unmarried.
- Female Married but Nullipara.
- Female Married, Multipara but Non lactating.



Q2: What are Causes & Types of Nipple Retraction?

- Congenital: Before puberty & Bilateral.
- Acquired: After puberty & Unilateral.
- e.g. • Cancer Breast.
- Mammary duct Ectasia.
- Chronic Breast Abscess.

Questions on General Exam.

Q3: What is meant by Occult Carcinoma?

- ☆ Carcinoma represented 1st by L.Ns enlargement as 1
- Naso-pharynx Ca. • Cancer Breast • Cancer Goitre • Cancer Testis

Q4: What are the causes of Supra-clavicular L.Ns Enlargement?

- Lt. side Enlargement
 - Below diaphragm: (Cancer Stomach, Cancer Colon & Hypernephroma & Cancer pancreas)
 - Above diaphragm: (Cancer Breast & Bronchial Carcinoma)
- Rt. side Enlargement
 - Below diaphragm: (Bare area of liver)
 - Above diaphragm: (Cancer Breast)

Q5: What is meant by Mediastinal Syndrome?

- Dyspnea, Congested Neck veins & Brassy cough.

Questions on Local Exam.

Q8: Which diseases characterized by Fibrosis?

- Chronic Breast Abscess.
- Mammary Duct Ectasia.
- Cancer breast (Scirrhus & Atrophic Scirrhus)

Q7: What is the Mechanism of Nipple Retraction?

- ★ Excessive Fibrosis

Q8: Is the colour of areola dark with fibrosis? Why?

- ★ Yes, Because fibrosis → ↑ Concentration of Melanocytes

Q9: Why is the upper outer quadrant commonest for Carcinoma?

- ★ Because, most of Mammary gland & oestrogen receptors are present in this quadrant

Q10: What are the possibilities of Bilateral Breast Mass?

- ★ Fibroadenosis
- ★ Carcinoma (rare)

N.B. To DD between the 2 causes:

- **Fibroadenosis:** mirror image.
- **Carcinoma:** Not mirror image.

Q11: Why Carcinoma being Circumscribed Edge?

- ★ Because it is a Hard (Malignant) mass inside Soft (Breast tissue)

Questions on Management

Q12: Why carcinoma being flat at undersurface of Breast?

- ★ Because, invasion occur anteriorly which is being less resistant.

Q13: How can you detect carcinoma of The Breast?

- ★ By **Tumor Marker** [As Routine for pt. > 40 years]

They are: → (CA 15-3) = (Cancer Antigen 15-3)

→ (MCA) = Mammary Carcinoma Antigen.

Q14: What are Types of Biopsy?

- FN AC.
- Frozen biopsy.
- Excisional biopsy.
- Paraffin biopsy.



Good luck

Hernia Sheet



Protrusion of an organ or tissue out of the body cavity in which it normally lies. 55

Chapter 5

HERNIA

INTRODUCTION

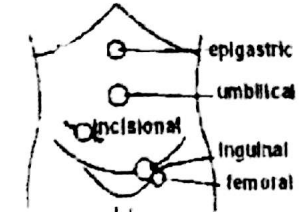
* DEFINITION

Hernia is Protrusion of a viscus or part of viscus within a peritoneal sac through an opening of abdominal wall.

* SITE

1. **Inguinal Region:** (i.e. Inguinal Hernia) (1st common)

⊙ **Area Above** Inguinal ligament (Groin crease).



	Indirect - Oblique	Direct
1. Incidence	• 80 %	• 20 %
2. Age & Sex	• Any age & Male > Female	• Old age & usually Male
3. Side	• Less common bilateral 30%	• More common bilateral > 50%
4. Shape	• Pyriform (Oblong)	• Hemispherical (Rounded)
5. Direction of descent	• Downwards, forwards & medial	• Forwards.
6. Descent into scrotum	• Can descend.	• Extremely Rare no descent
7. Reduction	• Upward and laterally.	• Backwards.
8. Internal Ring Test	• Not descend.	• Descent.
9. External Ring Test	• Wide ring and show impulse at tip of little finger	• Normal ring and show impulse at medial side of little finger.
10. Complications	• More common.	• Less common.

2. **Femoral Region:** (i.e. Femoral Hernia)

⊙ **Area Below** Inguinal ligament (Groin crease)

N.B [1] & [2] Called Groin Hernia

Q: What is Meant by Groin area? (See Q:1)

Q: What are the attachment of Inguinal Ligament (See Q:2)

3. **Umbilical Region:** (i.e. Umbilical Hernia)

⊙ Area midway between the xiphisternum & Symphysis pubis i.e. At normal site of umbilicus.

N.B. (a) Umbilical Hernia is Central & Rounded in shape.

(b) Para-umbilical Hernia is Excentric and Crescentic in shape.

Q: How can you DD between supra & infraumbilical hernia? (See Q: 3)

4. **Epigastric Region:** (i.e. Epigastric Hernia)

⊙ Area away from umbilicus and at site of linea Alba.

5. **Incisional Hernia:** (i.e. Post-operative hernia) (2nd common)

Q: What is the commonest incisional hernia and What is the main ttt? (See Q: 4)

6. **Others:** Rare sites of Hernia (See Q: 5)



* AETIOLOGY It may be 1

A. **Congenital**: Due to presence of a **Congenital Performed Sac**
e.g. The Remains of Processus Vaginalis (Congenital Inguinal Hernia).

B. **Acquired**: (due to) 2

1. ↑ Intra-abdominal Pressure

- Chronic Straining → cough, constipation or **Senile Enlargement of Prostate (SEP)**
- Abdominal Swelling → pregnancy, ascites or **HepatoSplenoMegaly (HSM)**
- Occupational as Porters

2. Weakness of Abdominal wall

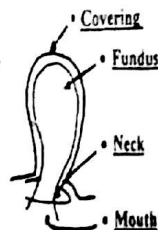
- Obesity → fat separate the muscle bundles and weakens the aponeurosis.
- Stretching by **pregnancy**
- Previous **Operations**

* STRUCTURE [The Defect + The Sac + The Content]

A **The Defect** Through which sac **Bulges out**.

B The Sac

- (See Diagram)
- The sac has many shape (see below) 2
 - ☆ **Pear-Shaped**: Indirect (oblique) inguinal hernia.
 - ☆ **Hemispherical**: Direct inguinal hernia.
 - ☆ **Conical**: Infantile Umbilical hernia.
- The Sac is fixed to surroundings and remain unreduced while the content can be reduced



C **The Content** • It may be any organ **Except the Pancreas**.

If Intestine 2

If Omentum 2

	Enterocoele	Omentocoele
Consistency	• Soft.	• Doughy.
Reducibility	• 1 st part difficult, because of gases.	• Last part difficult, because adhesion of sac and omentum.
Percussion	• Show Gurgling sensation.	• Show Doughy sensation.
Palpation	• Resonant.	• Dullness.
	• Lobulated surface.	• Smooth surface

Don't Forget [Types of Hernia] which may be 1

- ① **Infantile** → diagnosed **during** operation.
- ② **Congenital** → diagnosed by **rapidly** reaching the scrotum.
- ③ **Adult** → diagnosed by **gradually** reaching the scrotum.

I. HERNIA SHEET

* PERSONAL HISTORY

1. **Name**
2. **Age** → Congenital inguinal hernia (**Infant**), indirect (any age), femoral (adult)
3. **Sex** → Indirect inguinal hernia (**Male > Female**)
→ Direct inguinal hernia (**Male only**)
→ Femoral hernia common with (**Female**)
4. **Residence**
5. **Occupation** Jobs with straining as **Porters**
6. **Marital status** Repeated pregnancies
7. **Special habits of medical importance**
Chronic heavy smokers will have **chronic cough**



* **COMPLAINT** **Swelling ± Pain** (At site of Hernial Orifices)

* PRESENT HISTORY

- I. Analysis of complaint (Swelling ± Pain)
- II. Analysis of symptoms related to **Part** affected
- III. Analysis of symptoms related to **Other parts** affected

I. Analysis of Complaint (Swelling ± Pain)

1. O.C.D. (Onset - Course - Duration)

accidental progressive mostly months to years

2. PAINS

- ☆ Site, Side, size (lemon or orange size)
- ☆ Number
- ☆ Investigations & Itt (True used or not) (See Q:6)
- ☆ Associated swelling as (i.e. hernial orifices)
- ☆ Pain (usually painless) **except** if complicated.

O.C.D

Site

Extent

Characters (dragging by it's weight)

↑ by (straining)

↓ by (lying down)

severity (as symptoms)

③ ↑ with **Standing** straining

④ ↓ with **Lying down**, rest

II. Analysis of Symptoms related to Part affected

i.e. Local Complications

- ☆ **Irreducibility**: Patient **unable** to reduce the swelling
- ☆ **Obstruction**: Patient **suffer from** Constipation, Colics, Distension & Vomiting
- ☆ **Inflammation**: (F.H.M.A.) = Redness & Painful swelling
- ☆ **Strangulation**: [Painful] + (Manifestation of obstruction)

+ **Not** show Expansile impulse on cough (عشان لا ينفخ)

N.B. Strangulation = Tense & Tender

III. Analysis of Symptoms related to Other parts affected

Usually occur After Reduction

① Intestinal Symptoms

As Colics and dyspepsia in Enterocoele

② Urinary Symptoms

As Renewed desire to micturate i.e. Double Micturation

Q: When can you suspect sliding Hernia? (See Q: 7)

③ Patient's Ability to work (Affected or Not)

Don't forget Asking about the Possible Causes i.e. COPD, Ascitis or S.E.P (Straining at work)

★ PAST HISTORY

- Similar condition i.e. Recurrence
- History of diseases as DM, hypertension, heart disease etc....

History of previous operation If Incisional hernia

★ FAMILY HISTORY

- For Congenital mesenchymal wall

EXAMPLE OF

HERNIA SHEET

★ PERSONAL HISTORY

محمد إبراهيم حسن النعناعي Male patient, 52 years old, borne and live in طوخ Builder married since 32 years, has 7 children (4 girl & 3 male) the youngest 10 years old, his is a cigarette smoker and smokes 20 cigarette per day since 25 years. No other special habits of medical importance.

★ COMPLAINT

Bilateral painless swelling at both groin since 5 years ago.

★ PRESENT HISTORY

- The condition is started 5 years ago by swelling in Rt. groin of gradual onset and Intermittent course after lifting a heavy object, he develops another swelling at Lt. groin after one year from the onset.
- No investigations and treatment was done (Truss not used)
- No associated swellings at other Hernial orifices and No pain.
- The swelling is reaching scrotum. It ↑ by cough and straining and ↓ on lying down.
- There are No local complications: in form of
 - No history suggesting irreducibility: It is reducible by patient.
 - No history suggesting inflammation: No redness and oedema, No fever, Headache, Malaise & Anorexia.

- No history suggesting intestinal obstruction: In form of colics, vomiting, absolute constipation & abdominal distension
- No history suggesting strangulation: As severe pain.

• There is No desire of micturation after reduction of this swelling i.e. No Sliding Hernia

★ PAST HISTORY

No past history about recurrence, No DM, No hypertension, No T.B, No Bilharziasis, No drug allergy, No previous operations.

★ FAMILY HISTORY

No family history of similar condition (Irrelevant)

DIAGNOSIS

Bilateral Indirect, Uncomplicated
Inguino-scrotal Hernia

II. GENERAL EXAMINATION

★ VITAL SIGNS "See Page 2"

B. GENERAL EXAMINATION (A.B.C.D.E.F) "See Page 2"

N.B (Obesity: Contraindicate repair (Why) (See Q:8)

C. SYSTEMIC EXAMINATION

1st we look for manifestation of weak Mesenchyme

Then I. HEAD: → Eye: For Pallor & Jaundice

II. NECK: → Congested Neck veins

III. CHEST: → (COPD) like Asthma or Bronchitis.

IV. LOWER LIMB: → Flat foot, Varicose vein or Oedema

V. ABDOMEN

① **Rising Test** Ask the patient to raise his unsupported shoulders. Then look for Diversion of Rect i.e. poor musculature.

② **Maigne's Bulging:** Ask the patient to raise unsupported head then look at groin for bulging i.e. poor musculature.

Q: What is meant by Phantom Hernia? (See Q:9)

③ **Abdominal Swellings:** For Ascitis or HSM.

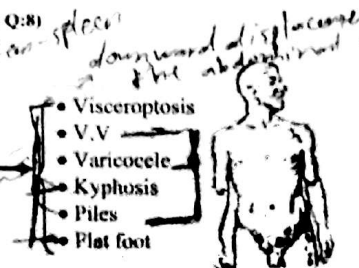
④ **Abdominal Distension:** for Exclusion of intestinal obstruction.

⑤ **Scars:** of previous operation as Appendectomy (Why) (See Q:10)

VI. SCROTUM: → If associated Varicocele

VII. PRE EXAMINATION: → For S.E.P or piles

Back Kyphosis



III. LOCAL EXAMINATION

PROPER POSITION

- The Examiner is Sitting with his eyes at the level of hernia & turning the patient's head to one side.
- If No swelling: Ask patient to cough and notice it.

PROPER EXPOSURE

The Patient should be standing up and bare of clothes from the nipple to the knee.

or 4th intercostal space.

INSPECTION NSED

N — ☆ **Number** → Usually Single

8 S ☆ **Site** → (See before)

But Don't Forget: "Groin hernia"

↳ Above groin crease → Inguinal hernia.

- Indirect: Descent to scrotum.
- Direct: Not descent to scrotum.

↳ Below groin crease → Femoral hernia.

☆ **Side** → Rt or Lt

Shape & Direction

- Oblong or Pyriform → Indirect inguinal hernia.
 - Downwards, Forwards & Medially
- Rounded or hemispherical → Direct inguinal hernia.
 - Forwards

☆ **Size** → Small, Moderate or Large or in (cm×cm)

☆ **Surface** → Smooth If Omentocoele
→ Lobulated If Enterocoele

☆ **Skin over** Normal or may show.

- Redness → Inflammation & Strangulation.
- Scars of previous operation → Incisional hernia.

☆ Other swelling (Look for other hernia)

☆ **Special sign** Expansile impulse on cough For other causes (See Q: 11)
Q: When Hernia not show this sign? (See Q: 12)

E — ☆ **Edge**: Very difficult to be seen

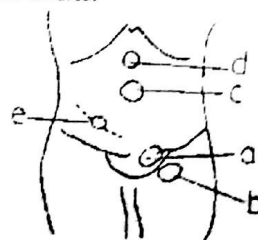
D — ☆ **Direct "Relations to Surroundings"**: (Look for)

- Scrotum & Root of penis: If Groin hernias
- Abdomen If Abdominal Hernias.

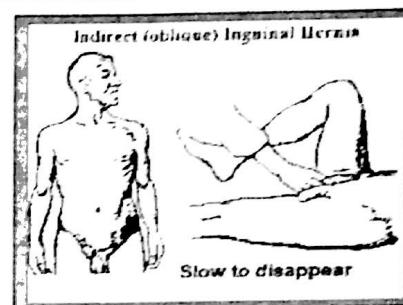


Sites of Hernias:

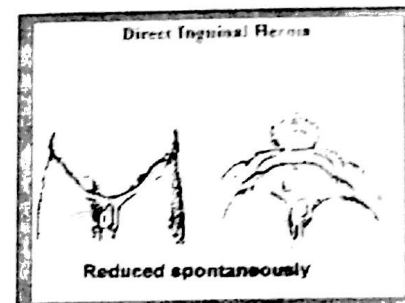
- Inguinal H.
- Femoral H.
- Umbilical H.
- Epigastric H.
- Incisional H.



Indirect (oblique) Inguinal hernia



Direct Inguinal hernia



PALPATION

PROPER POSITION: The Examiner must be from front or from side of the patient

PROPER EXPOSURE: The patient must be examined 1st while he is standing then supine.



(TESCR)

2 T ☆ **Temp.** → Warm if Inflamed hernia

☆ **Tenderness** → Specific to Strangulated hernia.

E — **Edge** • Ill defined usually with Indirect inguinal hernia
• Well defined usually with Direct inguinal hernia

8 S ☆ **Site** (Related to Pubic Tubercle)

- Inguinal hernia: Above & Medial.
- Femoral hernia: Below & Lateral.

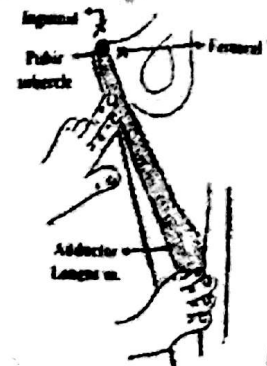
NB @ For Anatomical site of pubic tubercle & How clinically detected? (See Q: 13)

② If (Inguinal hernia) Ask your self: Is it inguinal or inguino-scrotal?

So: Hold the neck of scrotum between the thumb, in front and middle three fingers behind

- If Inguinal swelling → you can get above the scrotum.
- If Inguino-scrotal → you can't get above the scrotum.

Q: How can you know neck of scrotum clinically? (See Q: 14)



☆ **Side, Shape, Size, Surface, Skin over, Other swelling** (As Inspection)

☆ **Special sign**: Expansile Impulse on cough (grasp the swelling Ask Pt to cough)
N.B. It is Absent (only) in Strangulated Hernia.

expansile = ↑ in size or tension.

2C ☆ **Consistency:** Soft → Enterocoele

Doughy → Omentocoele

N.B. *Strangulated hernia is Tense & Tender*

☆ **Compressibility & Reducibility:**

➤ **When The Patient lies down look for the swelling**

□ Is It Reducible or not?

□ Is Reduction Spontaneous or induced?

The best one to reduce it is the patient himself

N.B.: To facilitate Spontaneous Reduction do,
Flexion, Adduction & Internal Rotation to patient's thigh

□ What is the direction of reduction?

- **Indirect** Inguinal Hernia Reduced upwards, backwards and laterally.

- **Direct** Inguinal Hernia Reduced directly backwards.

□ What is the content?

- If **Enterocoele**: The 1st Part difficult to reduced with **Gurgling** sensation

- If **Omentocoele**: The last part difficult to reduced With **Doughy** sensation

□ Is the reduction brings a desire of micturation or not?

It is seen in hernia containing urinary bladder i.e. **Sliding Hernia**.

R — ☆ **Relation to surroundings:**

• Examine Testis & Cord: (In Groin Hernias) → *Mature P 88*

• Examine Abdomen: (In Abdominal Hernias)

★ **PERCUSSION** " Mainly in Abdominal Hernia "

○ If the Content (Intestine) → **Resonant** i.e. **Enterocoele**.

○ If the Content (Omentum) → **Dullness** i.e. **Omentocoele**



★ **AUSCULTATION**

○ Intestinal sound is heard in [An Enterocoele]

★ **TRANSILLUMINATION**

○ Hernia in **Infants only** is Translucent



SPECIAL TEST OF HERNIA

V. IMPORTANT

Internal Ring Test

☆ It is used for Groin hernias.

☆ The patient **lies down** and the hernia is reduced then put your finger over the internal ring which lies $\frac{1}{2}$ Inch above mid point of inguinal ligament (midway between Pubic Tubercle & A.S.I.S)

Q: What is meant by mid-inguinal point?

It is Mid way between (Symphysis Pubis & A.S.I.S)

☆ Ask The Patient to Cough: Then repeat while **Standing**.

☆ The Result: An **Indirect** (oblique) inguinal hernia does **not** Protrude Except after removal of the finger. (**D.D.** **Direct** inguinal hernia)

External Ring Test

(المريض واقف)

☆ It is used for Groin hernias.

☆ The Patient is **Standing** and the hernia is reduced then put your little finger which is passed into the external ring, invaginating the scrotum, with your nail towards the spermatic cord.

→ **Normally**: The External Ring just admits the tip of the little finger

→ If the Ring is **wide** = **Indirect inguinal hernia**.

☆ Ask The Patient to Cough

☆ The Result

→ Impulse on The **Tip** of the little finger = **Indirect inguinal hernia**.

→ Impulse on The **Medial Side** of the little finger = **Direct inguinal hernia**.



Zeiman's Technique

(المريض واقف)

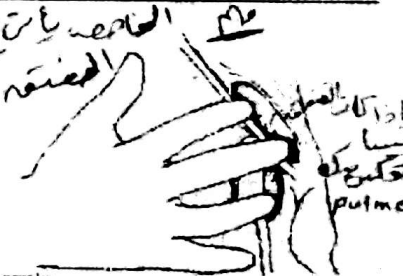
☆ **Indication**: If **No** obvious lump is detected,

☆ **Technique**: Placing your **index** finger over Internal ring, & the **middle** finger over External ring, & the **Ring** finger over Femoral canal.

☆ Ask The Patient to Cough

☆ The Result: If The Mass protrude :

- At **Index** finger (Internal ring) = **Indirect hernia**.
- At **Middle** finger (Inguinal canal) = **Direct hernia**.
- At **Ring** finger (Femoral canal) = **Femoral hernia**.



ORAL DISCUSSION ABOUT : MANAGEMENT OF HERNIA

[1] Indirect (Oblique) Inguinal Hernia (O.I.H.)

⊗ INOPERABLE

- If Cardiac and Chest troubles or Pt. refuse operation
- Truss: "Rate Tail with perineal band" Will be used
Q: What are the complications of the Truss?
• Adhesion • ↑ Risk of strangulation.
• Infection. • Pressure atrophy on local muscle.

⊗ OPERABLE

(a) Herniotomy = [Removal of sac]

- Indicated in Infant or young

(b) Herniorrhaphy = [Removal of sac + Reconstruction of Inguinal canal]

- Indicated in Adult or old + large hernia + good musculature.

Q: Why complicated by 2ry varicocele or 2ry hydrocele?

Because of Tighting of External ring or Internal ring or Both.

(c) Hernioplasty = [Reinforcement of Post. wall by synthetic material]

- Indicated in: Recurrent + very wide defect + poor musculature

Q: From where can we use natural material? *من أين نأخذ المادة الطبيعية؟*

- Fascia lata. • Skin over hernia

[2] Direct Inguinal Hernia

- ⊗ INOPERABLE: (Old) → Truss will be used.

- ⊗ OPERABLE: Herniorrhaphy or better Hernioplasty but no herniotomy only b/c of ↑ rate of recurrence.

[3] Recurrent Hernia

- ⊗ Complete Re-excision of sac then Herniorrhaphy or better Hernioplasty

[4] Femoral Hernia

- ⊗ Operations are the main treatment (Truss is contraindicated)
Because • Hernia not reducible.
• Not fit to upper thigh.

[5] Incisional Hernia

- ⊗ Inoperable or Huge in size: → Palliative Abdominal Corset.

- ⊗ Operable: Anatomical, Keel, Catell's Repaire (See Operative)

[5] Epigastric Hernia

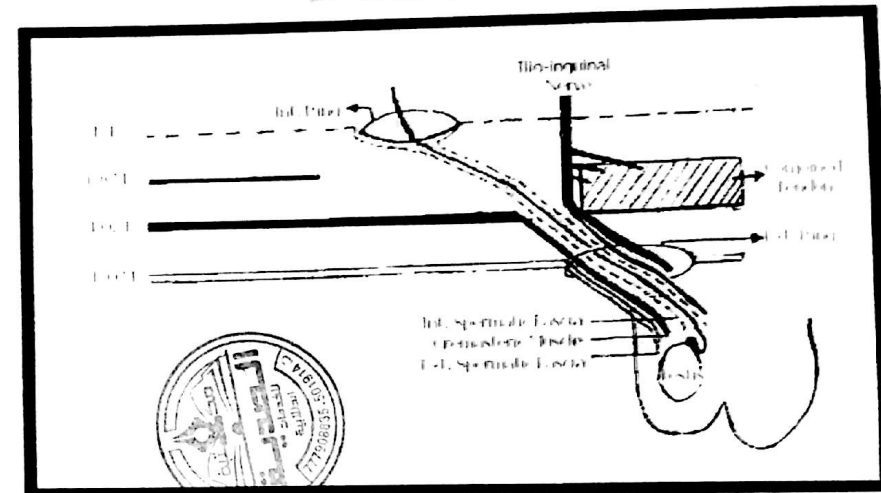
- ⊗ Excision & Repair the defect in Linea Alba or Mayo's operation as PUH.



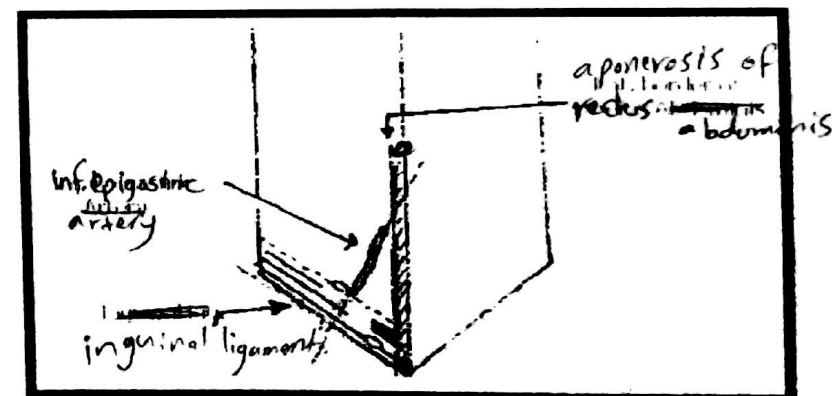
ORAL
DISCUSSION

HERNIA

DIAGRAMS



HASSELBACH ▲



QUESTIONS OF ANATOMY

Q1: What is meant by Groin area?

☆ It is area above & below the inguinal ligament.

Q2: What is the attachment of Inguinal ligament?

☆ Attached from A.S.I.S → Pubic tubercle at Symphysis pubis.

Q3: How can you DD between Supra & Infra-umbilical hernia?

☆ By Crescentic shape

- If downward →  → Supra-umbilical hernia
- If upward →  → Infra-umbilical hernia

Q4: What is the commonest Incisional hernia & It's ttt?

☆ Post-Appendectomy & Prophylaxis is main ttt.

Q5: What are the rare sites of hernia?

☆ The Rare sites are: Lumbar, Obturator, Sciatic, Gluteal Hernias

Questions on Sheet

Q6: What is meant by 'Truss'?

☆ Truss is rat-tail with perineal band →
& Indicated with unfit patient to surgery.

Q7: When can you suspect 'Sliding Hernia'?

☆ By renewed desire for micturation. (double micturation)
- Irreducible at end - long standing.
- Pressure on hernia cause desire to micturate.
N.B: Sliding hernia mean urinary bladder forms a part of wall of hernia

Questions on General Exam.

Q8: Why Obesity contraindicate repair?

☆ Because, Fat separate between muscle fibers, So rate is very high.
→ So Contraindicate repair.

Q9: What is meant by Phantom hernia?

☆ Phantom hernia = Malgaign's Bulging = الشبج

Q10: Why Appendectomy may lead to Direct Inguinal Hernia?

☆ If complicated by cutting of Ilio-inguinal nerve → Direct Inguinal hernia.

Questions on Local Exam.

Q11: What are other causes of Expansile Impulse on cough?

- Hernia
- Meningocele.
- Pneumatocele
- Empyema Necessitatis.
- Laryngocele.

Q12: When hernia not show Expansile Impulse on cough?

☆ If Strangulated hernia only.

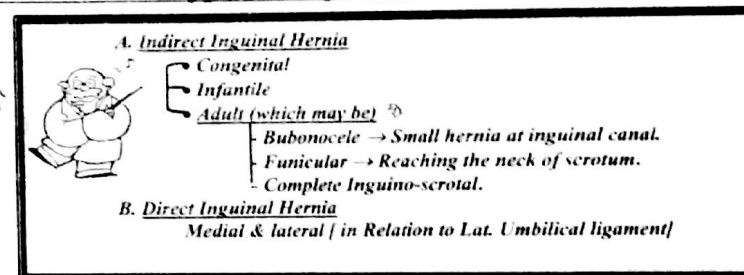
Q13: How can you 'Clinically' detect The Pubic Tubercle?

☆ Through, Tendon of Adductor Longus Muscle

Q14: How can you know Neck of Scrotum clinically?

☆ By • Root of penis.
or • Change of shape of skin.

Q15: What are the Types of Inguinal Hernia?



Questions on Management

Q16: What are Types of Herniorrhaphy?

1. **Bassini Repair:**
Suturing Conjoined tendon with Inguinal ligament.
2. **Shouldice Repair:**
Double Breasting of Fascia Transversalis.
3. **Halsted Repair:**
Repair Ext-oblique Aponeurosis is behind the cord.
4. **Blood-good Repair:**
Triangular Flap of Ant. Rectus sheath behind the cord.

Q17: What is Meant by ?

1. **Pantaloon Hernia?**
Direct & Indirect hernial sacs at the same side. They saddle the inferior epigastric artery one sac being medial & other lateral.
2. **Litter's Hernia?**
Meckel's Diverticulum as a content of the hernia

3. Richter's Hernia?

A portion of the circumference of the intestine as a content of the hernia.
This occurs in a femoral hernia.

4. Maydl's Hernia?

Two loops of the bowel (Hernia-in-W) as a content of the hernia.

5. Sliding hernia?

Hernia where a viscus forms a part of the wall

Q18: How do you suspect clinically the presence of a Sliding hernia?

- From History, There is a Double micturation
- From Examination, There is usually a Residual Swelling after reduction

Q19: Where are DD of Swellings in Femoral Triangle?

- * Lipoma *irreducible*
Characterized by (soft, smooth, slippery edge, superficial to muscles & skin over show dimpling)
- * Femoral aneurysm *reducible*
Characterized by (Expansile pulsation)
- * Saphena Varix *reducible*
Characterized by (thrill on cough, completely disappear on lying down, venous hum on auscultation & apparent varicose vein).
- * Femoral L.Ns. *irreducible*
As cloquet or part of generalized L.Ns.
- * Psoas Abscess *reducible*
Characterized by (cross fluctuation & x-ray spine shows Pott's disease).
- * Ectopic Testis *irreducible*
Characterized by Empty scrotum.
- * Psoas Bursitis *reducible*
Characterized by osteoarthritis of hip joint.
- * Inguinal Hernia *reducible*
Above & medial to Pubic Tubercle.
- * Femoral Hernia *reducible or irreducible (M/O)*
Below & lateral to Pubic Tubercle.

Good luck



Inguino-Scrotal Sheet



Chapter 6

INGUINO-SCROTAL CASE

INTRODUCTION

1. Inguino-scrotal Swellings

(Can Not get Above The Swellings)

- ⊙ IF Expansile Impulse → with Thrill & Not Reducible Varicocele
 → with No Thrill & Reducible O.I.H (Oblique Inguinal Hernia)

- ⊙ IF No Expansile Impulse → with +ve Transillumination.

May be → ① Congenital Hydrocele (Change in Size)
 → ② Infantile Hydrocele (No Change in Size)

2. Scrotal Swellings

(Can get Above The Swellings)

- ⊙ IF Testis & Epididymis (Felt)

May be → ① Encysted Hydrocele (Gap)
 → ② Spermatocele (No Gap)

- ⊙ IF Testis & Epididymis (Not Felt)

May be → Irry Vaginal Hydrocele

SO

The Most Important swellings Are

- [1] Inguino-scrotal → Varicocele
 → O.I.H "See Chapter V"
 [2] Scrotal swelling → Irry Vaginal Hydrocele

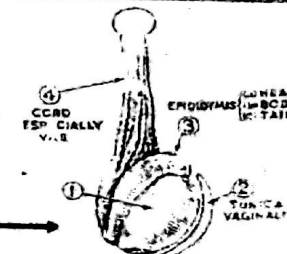
V. Important Oral Anatomical Discussion

- * Groin: Area Above & Below the Inguinal Ligament.

- Inguinal Region: Area Above the Inguinal Ligament
- Femoral Region: Area Below the Inguinal Ligament

So Groin = Inguinal Region + Femoral Region

- * The contents of The Scrotum →



[1] Varicocele

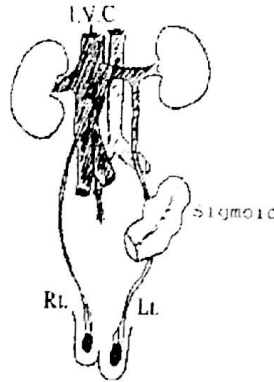
★ **DEFINITION** It is Elongated, Dilated & Tortuous veins of Pampiniform plexus.

★ **AETIOLOGY** It is due to [Congestion] (Usually 1ry Varicocele)

- ① Congenital weakness of wall of veins.
- ② Congenital absence of valves
- ③ Prolonged sitting or standing
- ④ Chronic constipation or straining at stool
- ⑤ Unrelieved sexual desire

★ **SITE** It occurs at Lt. Side (95%) Why? Because:

- ① Lt. Testicular vein opens in the Lt. Renal vein at Rt. angle i.e. No protective valves.
- ② Lt. Testicular vein lies beneath the Sigmoid colon and so liable to compression.
- ③ Lt. Testicular vein be longer because the Lt. Testis usually lies at lower level than Rt. Testis
- ④ Lt. Renal vein pass anterior to aorta & posterior to superior mesenteric artery i.e. Nut Cracker



★ **COMPLICATIONS**

- ① Recurrent attacks of Thrombophlebitis
 - ② 2ry Hydrocele (↓ drain of Pampiniform plexus)
 - ③ Testicular Atrophy which leads to Infertility
- Q: What are the 2 Theories which explain? (See Q: 1)*
Q: Why is infertility occurs inspite of varicocele being unilateral? (See Q2)
- ④ Neurosis *disorder of sense of motion.*
 - ⑤ Interfering normal activity by Sagging skin

★ **TREATMENT**

1. Conservative (mainly) → Avoid straining & tt of constipation.
 No → Scrotal Suspensor better avoided (See Q: 3)
 → Sexual life is regulated
 → Patient takes frequent cold baths.
2. Operative (Indicated with) Painful Varicocele or Oligospermia

N.B. 2ry varicocele (Rare)

- ★ It is due to obstruction of Testicular veins high up in abdomen as in Hypernephroma or after Herniorrhaphy

	1ry Varicocele	2ry Varicocele
Age	• 20-25 years	• > 50 years
Site	• Usually Lt. (95%)	• Usually Bilateral.
On lying down.	• Disappears	• Partially Disappear
Abdominal Exam	• No swelling.	• Present e.g. Hypernephroma.

- ★ **Investigation:** Semen Analysis & Duplex
 ★ **Treatment** of the cause

I. VARICOCELE SHEET

★ **PERSONAL HISTORY**

1. Name
2. Age
3. Sex : Male
4. Occupation : Jobs with prolonged standing at Hot weather
5. Residence
6. Marital status (For Infertility)
7. Sexual history (For Unrelieved Sexual Excitement)
8. Special habits of medical importance.

★ **COMPLAINT** • Multiple Swellings ± Pain or Complications as Infertility

★ **PRESENT HISTORY**

- I. Analysis of complaint (Swelling ± Pain)
- II. Analysis of symptoms related to Part affected
- III. Analysis of symptoms related to Other parts affected

I. Analysis of complaint (Swelling ± Pain)

1. O.C.D. → 1ry Varicocele = Gradual onset & long duration.
 → 2ry Varicocele = Sudden onset & short duration.

2. PAINS

- ★ Site, Side
- ★ Number
- ★ Investigations & tt (Using Scrotal Suspensor or not)
- ★ Associated swelling as (as Inguinal region) (See Q: 4)
- ★ Pain (if present) → Dragging (cord traction)
 → Dull ache (congestion)

1. O.C.D
2. Site
3. Extent
4. Characters
5. ↑ by
6. ↓ by
7. Associated symptoms

II. Analysis of symptoms related to part affected

- Thrombophlebitis: If occur [F.H.M.A + Firm & Tender Cord like]
- Sagging Scrotal Skin may interfere patient's activity.

III. Analysis of symptoms related to other parts affected

- Infertility (The commonest symptom)
 • Begins before or after the history of the disease.

★ **PAST HISTORY**

- ★ Similar condition
- ★ History of diseases as DM, hypertension, heart disease etc
- ★ Previous operations i.e. Herniorrhaphy
- ★ Previous abdominal swelling i.e. Hypernephroma

★ **FAMILY HISTORY**



EXAMPLE OF

VARICOCELE SHEET

★ PERSONAL HISTORY

سليمان عبد العال Male patient, 35 years old, ياتق live in يولاق married since 3 years and has 2 children. The youngest is 6 months. No special habits of medical importance.

★ COMPLAINT

Painful Lt. Scrotal swellings 3 years ago.

★ PRESENT HISTORY

- The condition start since 3 years by gradual onset & slowly progressive course.
- The condition is associated with multiple swellings at Lt. side of scrotum then becomes bilateral
- No inguinal swellings e.g. Thrombophlebitis L.Ns.
- The pain is Heaviness, dragging in character.
Also ↑↑ by prolonged standing & ↓↓ by cold baths.
- No symptoms suggesting local complications
as Superficial Thrombophlebitis but there is Sagging of scrotal skin.
- No Investigations & Treatment was done.
- He is advised to use scrotal suspensor but he didn't use it.
- No history about infertility.

★ PAST HISTORY

- No similar condition, No D.M., No T.B., No Bilharziasis, No drug allergy.
- The patient have cardiac trouble.
- No history about Renal mass or hernia operations.

★ FAMILY HISTORY

No family history of similar condition (Irrelevant)

DIAGNOSIS

Bilateral (Non Complicating) 1ry Varicocele



II. GENERAL EXAMINATION

- ★ As Usual (If you suspect 1ry Varicocele) Look for Weak Mesenchyme
but (If you suspect 2ry varicocele). Look for ♂
- Abdominal Swelling i.e. Hypernephroma
- Scars: For Hernia operations (At hernia orifices) i.e. Herniorrhaphy

III. LOCAL EXAMINATION

- PROPER POSITION Patient 1st standing then lying down
- PROPER EXPOSURE From umbilicus down to knees.

A. The patient is standing

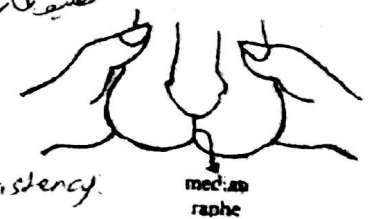
★ INSPECTION

- ① Swellings:
 - Unilateral or bilateral. (commonly at Lt. side)
 - Multiple, Elongated & Tortuous veins
 - Inguino-scrotal swellings.
- ② Skin over:
 - Sagging skin
 - For Redness as in Thrombophlebitis
- ③ Inguinal region: To Exclude
 - Oblique Inguinal Hernia (O.I.H)
 - Inguinal L.Ns Enlargement
- ④ Scrotum:
 - Symmetry of shape & size of scrotal compartment.
How? By looking to Median Raphe.
 - The Lt. side hangs lower than Rt. side
 - Associated cutaneous scrotal swellings as SEBACEOUS CYSTS.
- ⑤ Penis:
 - Congenital anomalies. [Phimosis, Paraphimosis, Epispadias & Hypospadias]
 - Circumcised or not



★ PALPATION

- ① Swellings: "Inguino-scrotal" by examination of Neck of scrotum
Q: How can you detect it clinically? (See Q: 5)
Then comment as Inspection + ♂
 - The veins are Soft & Compressible. consistency.
 - Palpable Thrill on cough



Special Test → BOW TEST

If the Examiner lightly holding the Varicocele between the Fingers & Thumb, Then the patient is instructed to bow. The Tension within the veins becomes obviously less.

Explanation

(Bowling → Obliteration of lumbar lordosis so leads to increase venous return ↑ V.R.)



② Skin over: [As Inspection + 3T]

- Temp usually warm.
- Tender cord like if Thrombophlebitis
- Thrill on cough.

③ Inguinal region: Same As Inspection

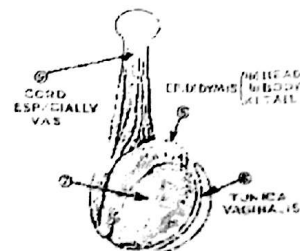
④ Scrotum: Same As Inspection

⑤ Penis: Same As Inspection

⑥ Tunica Vaginalis

Minimal effusion i.e. 2ry small hydrocele.

Which is Tested by Pinching Test: by pinching the tunica over testis "Normally doesn't pinch."



⑦ Testis: • Slippery edge.

- Oval in shape & Firm in consistency.

- Testicular Sensation (by Patient himself). (See Q: 6)

⑧ Epididymis • Normally is definable

⑨ Spermatic cord: (Rolling the components between Thumb & index)

- Normally the size is less than thickness of little finger.
- We felt Bag of worms of dilated veins



B. The patient is lying down

★ INSPECTION • The Varicocele is diminished in size (If 1ry Varicocele)

★ PALPATION • The scrotum is elevated, because action of Cremasteric muscle

- The veins - If empties Completely → 1ry Varicocele.
- If empties Partially → 2ry Varicocele.

[2] Hydrocele

[A] HYDROCELE OF TUNICA VAGINALIS

- It is a Collection of Fluid in Tunica Vaginalis

- Anatomy " See Diagrams "

- It may be I. Vaginal Hydrocele (1ry or 2ry)
II. Congenital
III. Infantile.



A. 1ry vaginal Hydrocele

★ DEFINITION Collection of Fluid in Tunica Vaginalis only

★ INCIDENCE Commonest Scrotal Swelling in Egypt

★ CAUSES "Idiopathic"

But The most accepted theory is due to

- 1ry Filariasis of Tunica.
This based on ① Common in Endemic area as Elasharkia, Rasheed ... etc
② The Hydrocele usually "bilateral"



★ PATHOLOGY

- ★ Tunica: Thin or Thick & may be Calcified

- ★ Fluid: H₂O, Salts, Albumin and Fibrinogen with specific gravity 1010-1020 (See Q: 8)

★ COMPLICATIONS

- ① Pyocele: If infection.
- ② Calcification of sac.
- ③ Haematocoele: If trauma or attempts for aspiration.
- ④ Interfere for daily activity.
- ⑤ Testicular atrophy → infertility



★ TREATMENT

★ Aspiration (Not done) because of it's Complications as (Haemorrhage, Infection, Testicular atrophy & 100% Recurrence)

- ★ Surgical ① Eversion of Tunica.
② Excision of Tunica.
③ Lord's operation (The Most popular)

See Operative Notes.

I. B. 2ry vaginal hydrocele → "Less Common"

- 2ry to • Acute: Acute Epididymo-orchitis & Endemic Funiculitis.
- Chronic: S or T.B. or Filariasis or after Varicocele or Hernia operation. (See Q: 9)



II. Congenital Hydrocele

* DEFINITION

Processus Vaginalis remains patent & connected by small opening to peritoneal cavity (It may be due to T.B peritonitis).
So change in size.

* AGE

Infants

* C/P

Inguino-scrotal swelling with change in size.
i.e. ↓ in morning & ↑ at end of day.

* O/E

Inguino-scrotal Swelling (Cystic + Translucent)

* D.D

Congenital Hydrocele

- No reduction.
- No impulse on crying.
- Dull on percussion.

Congenital Hernia

- Reduction occurs.
- Impulse on crying.
- Resonant on percussion

* TREATMENT

☆ Upper part: Transfixed as ttt of Hernia.

☆ Lower part: Everted as ttt of Hydrocele.

III. Infantile Hydrocele

* DEFINITION

As the Congenital Type, but no connection to peritoneal cavity

* AGE

No necessarily in Infant

* C/P

Inguino-scrotal Swelling with No change in size.

translucent

* O/E & TREATMENT

As Congenital Hydrocele.

[B] HYDROCELE OF SPERMATIC CORD

I. Encysted Hydrocele of the cord

* DEFINITION

Obliteration of Processus Vaginalis Except the middle part.

☆ It is Scrotal Swelling.

☆ The Mass separated from Testis by Gap (D.D Spermatocele)

☆ It Moves Side to Side not up & down.

N.B.: Spermatocele: It is a Retention cyst in head of Epididymis
2ry to obstruction of vas.

II. Diffuse Hydrocele of the Cord

- ⊛ It is a Diffuse swelling of the Cord due to Chronic lymphatic obstruction.
- ⊛ Caused by Filariasis.
- ⊛ Excision is Difficult and Unnecessary.

III. Hydrocele of Hernial sac

- ⊛ It Occurs in narrow neck sacs if the contents, return & the neck of sac becomes occluded by Omentum then serous fluid collects in the sac.

Haematocele

Collection of blood in the Tunica Vaginalis

[A] Recent Haematocele:

- ⊛ Aetiology: ① Injury of blood vessels during aspiration.
② Trauma of the testis.

⊛ Clinical picture: Painful, non translucent mass

⊛ Treatment: Urgent Evacuation of blood & Excision of Tunica.

[B] Old clotted Haematocele:

⊛ Aetiology: From neglected recent cases.

⊛ Clinical picture: as Recent
+ Hard in consistency & may be complicated by testicular atrophy.

⊛ Treatment:
If **Early cases**: Dissection of clot from testis & Excision of tunica
But If **late cases**: Orchiectomy.

Pyocele

Collection of Pus in the Tunica Vaginalis

- ⊛ Aetiology: ① Infected Hydrocele.
② Infected Haematocele.
③ 2ry to Suppurative Epididymo-orchitis.

⊛ Treatment:
Rest, Antibiotics & Drainage of pus

Chylocele

Collection of Chyle (lymph) in the Tunica Vaginalis

- ⊛ Aetiology: Rupture of lymphatic vessels inside the Tunica
This is occur with Filariasis.

II. GENERAL EXAMINATION

☆ As Usual (If you suspect 2ry hydrocele) Look for ^{2b}

• Scars: For Hernia operations (At hernia orifices) i.e. *Herniorrhaphy*

III. LOCAL EXAMINATION

▷ PROPER POSITION Patient is standing Only

▷ PROPER EXPOSURE From Umbilicus down to knees.

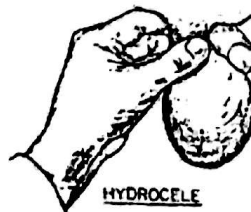
▷ DON'T FORGET → 1ry Hydrocele is Large & Tense cystic. (+ **Ve Fluctuation test**)
→ 2ry Hydrocele is Small & Lax. (+**Ve Pinching Test**)

★ INSPECTION

- ① Swellings: → Unilateral or bilateral. (commonly at bilateral shape)
→ Pyriform in shape if 1ry Hydrocele
→ Scrotal swelling
- ② Skin over: Same as Varicocele but No Sagging skin
N.B.: REDNESS OF SKIN OVER = PYOCELE
- ③ Inguinal region: Same as Varicocele
- ④ Scrotum: Same as Varicocele
but may be associated with cutaneous hypertrophy
by hard non-pitting oedema i.e. Filariasis
- ⑤ Penis: Same as Varicocele

★ PALPATION (Examine the Healthy side 1st)

- ① Swellings: As Inspection + ^{2b}
• The Swelling is Smooth surface
• Not show Expansile impulse or thrill on cough.
• Tense & cystic in consistency if 1ry Hydrocele.
and Lax in consistency if 2ry Hydrocele
- ② Skin over:
- ③ Inguinal region: } Same as Inspection
- ④ Scrotum:
- ⑤ Penis:



⑥ Tunica vaginalis

Shows → Effusion, which may be ^{2b}

1. Minimal, If 2ry Hydrocele.

• By Pinching Test

2. Marked, If 1ry hydrocele

• By Bipolar fluctuation → **Bipolar Fluctuation**

- Put the thumb in front and the middle Three fingers of one hand behind the Neck of scrotum.

• The Result: If you receive an impulse by the fingers at the neck of scrotum this indicates presence of fluid in the tunica.

⑦ Testis

⑧ Epididymis

⑨ Spermatic cord: (Rolling the components between. Thumb and Index)

- Normally the size is less than thickness of little finger.

• We Felt → Matted cord if Filariasis

→ Nodular Vas if B or Beaded Vas if T.B

→ Cyst in cord if Encysted Hydrocele of cord.

Q: How to Differentiate Encysted Hydrocele of cord & Spermatocoele?



By Moving the swelling by one hand & the testis by opposite hand, away from each other.

☆ If No gap = Spermatocoele.

☆ If gap = Encysted Hydrocele of cord.

★ TRANSLUMINATION

- Put a light source on one side of the scrotum and look through a Black tube from the opposite side
- If light is transmitted through the swelling, it is called Translucent

N.B.: Causes of Opaque Hydrocele

- Pyocele
- Haematocoele
- Chylocele
- Calcified tunica



ORAL
DISCUSSION

INGUINO-SCROTAL

VARICOCELE CASE

Q1: What are the 2 theories which explain infertility?

- Congestion
- Toxins [↑Steroids & Catecholamine] → ↓ Spermatogenesis.

Q2: Why Infertility occur inspite of varicocele being unilateral?

- ✧ Both testis are affected due to presence of intercommunicating veins

Q3: Why Scrotal suspensor better avoided?

- ✧ Because, inspite of ↓ pain but ↑ risk of infertility

Q4: What are causes of swellings at Inguinal region?

- L.Ns: (If Thrombophlebitis)
- O.I.H.: (If Associated)

Q5: How can you detect the Neck of scrotum clinically?

- At Root of penis
- Change of shape of skin.

Q6: What are the causes of lost Testicular sensation?

- Malignancy & Gumma(\$)

HYDROCELE CASE

Q7: What are the Contents of Spermatic cord?

- Vase
- Vestige of processus Vaginalis
- A = Artery of vas & Testicular artery.
- V = Pampiniform plexus
- N = Sympathetic elements
- L = Lymphatic vessels

Q8: How can you DD of Hydrocele Fluid & CSF?

Put drop of blood • CSF → NO Clotting

- Hydrocele fluid → Clotting.



CSF Hydrocele Fluid

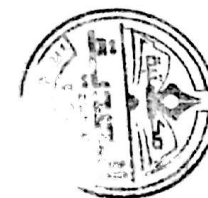


Q10: What are causes of swellings at Inguinal region?

- L.Ns: (If Pyocele)
- O.I.H.: (If Associated in 5% of cases).

Good luck

Abdominal Case



ABDOMINAL SHEET

* PERSONAL HISTORY

1. Name W A 20-30 years sin 740 years
2. Age W A Splenomegaly common in young adult
Splenomegaly due to Haemolytic Anaemia common in children
3. Sex W A Splenomegaly common in male.
4. Residence A Splenomegaly more common in endemic area as Villages
5. Occupation A Splenomegaly more common in farmers
6. Marital status
7. Special habits → Swimming in canals predispose to liver cirrhosis
→ Alcohol my predispose to no liver cirrhosis
- Q: What are the hazards of Alcohol? (See Q:1) →

* COMPLAINT "May be one the following"

- Swelling.
- Pain.
- Upper GIT symptoms.
- Lower GIT symptoms
- Hepatobiliary symptoms.
- Urinary symptoms.

* PRESENT HISTORY

1. SWELLING

1. O.C.D (Onset - Course - Duration)

2. PAINS

- ☆ Site, Side
- ☆ Investigations & ttt (done before)
- ☆ Associated swelling as (suggestive of malignancy)
- ☆ Pain " If present"

2. PAIN

e.g. In case of "Splenomegaly" (See Q:2) onset in A is acute.

☆ Site: Lt. hypochondrium

☆ Characters Dragging pain (Heaviness) from traction of huge spleen.
Stitching pain, due to Peri-splenitis.
Dull ache pain, due to congestion.

☆ Severity: variable.

☆ Radiation: [In Peri-splenitis only] to Lt. shoulder.

☆ Aggravating Factors: (↑) with Exercise & Heavy meals.

☆ Relieving Factors: (↓) with Lying down & Rest.

Don't forget

Ask about Associated Fever with Splenomegaly.

As in (Malaria) or (liver cirrhosis)



↑ in A by movement of Cough
↑ in G by lathy meal.
↓ in G by anti-spasmodic

A. Oro-oesophagus: → **Bad smell** of mouth "Halitosis" e.g. Foetor hepaticus with (L.C.F)
→ **Dysphagia**: At what level + for fluids or solid.

└─▶ e.g. Cancer Oesophagus
 e.g. Achalasia.

- ☆ Frequency (Number of attacks) and date of last one.
- ☆ Amount (in Cups)
- ☆ History of Blood transfusion
- ☆ Colour of blood " Fresh or coffee" *What is difference?* (See Q: 3)
- ☆ Associated Melena.
- ☆ Admission to hospital, Ryle or any tube application.

Q: What is DD between Haematemesis & Haemoptsis? (See Q: 4)

Q: What are the commonest 2 causes? (See Q: 5)

Q: What are the commonest 2 causes? (See Q: 5)

→ **Appetite:** Lost in malignancy, & T.B

Vomiting: "Frequency-Amount-Colour-Odour-Content"

→ **Heart burn:** Relation to postural.

• Eructation & Water brush

A. Defecation: "Analysis as vomiting"

B. Melena or Fresh bleeding per rectum.

N.B. Melena means black tarry stools & persist 2-4 days after stoppage of Haematemesis (About 50 cc blood from upper GIT can produce it)

Q: What are DD black steel? (See Q: 6)

Q: What are the causes of bleeding per rectum? (See Q: 7)

A. Gall Bladder → Fatty dyspepsia.

→ Jaundice

- **Hepato-cellular** : in Liver Cirrhosis

- Obstructive in Liver Metastasis

- Liver cell failure: (LCF)

- Jaundice
- Gynaecomastia
- Oedema & Ascites.
- Loss of libido
- Bleeding Tendency
- Palmar Erythema

A. Urine: (Amount - Colour - Odour - content "as Haematuria")

B. Urination Difficulty, Hesitancy, etc.....

C. Uraemic manifestation:



- * Similar condition
- * Diseases as DM, Hypertension, Heart diseaseetc

- * Haemolytic Anaemia.
- * ~~B~~ Splenomegaly in Endemic area

ABDOMINAL SHEET

Male patient, 44 years old, Borne and live in حليمة الزينون Hair dresser, married since 4 years, has 2 children, the youngest has 6 months. He is smoker, smokes 10 cigarettes per day for 10 years. No special habits of medical importance as (Swimming in channels).

Painful mass at Lt. Upper Abdomen 7 years ago.

- The condition is started 7 years ago by Abdominal distension and bilateral swelling of both lower limbs by gradual onset and progressive course.
- The patient is admitted to the **الحمد لله** hospital and received medical Treatment in form of Lasix, Aldactone and Tapping about 1.5 liter which is yellowish in Colour and clear.
- Two months later the patient complain of pain in Lt Hypochondrium which is Heaviness in characters, ↑ by walking, eating and Heavy meals. And ↓ by rest and light meals.
- The condition is not associated with fever.
- The patient had attack of Bilharziasis in form of **Terminal Haematuria** since 25 years and treated by Tarter Emetic Ampoules.
- No history of Blood transfusion.
- No upper G.I.T. symptoms as halitosis, dysphagia, Haematemesis, vomiting, heart burn, loss of appetite or water brush etc....
- No lower G.I.T symptoms: as diarrhea, constipation, Melena etc ...
- No Hepato-biliary symptoms as fatty dyspepsia, jaundice etc ...
- No urinary tract symptoms: as urgency, etc.

★ PAST HISTORY

No past history about recurrency. No DM. No hypertension. No T.B. there was history about cardiac operation since 15 years (Pericardectomy)

★ **FAMILY HISTORY**

No family history of similar condition (Irrelevant)

DIAGNOSIS

Swelling in L.T. Hypochondrium most probably Bilharzial (Splenomegaly)

II. GENERAL EXAMINATION**A. VITAL SIGNS** As Usual "See Page 2"

fever & tachycardia in appendicitis.

B. SYSTEMIC EXAMINATION

- A = Appearance** → Cachexia in advanced cancers
B = Built → Underweight in Bilharziasis
C = Conscious → Drowsiness in Uraemia or (L.C.F)
D = Decubitus → Leaning forward in cancer pancreas
E = Emotion → Alert in Uraemia.
F = Face → Toxic in infection & Earthy in Uraemia.

**C. SYSTEMIC EXAMINATION****I. HEAD:**

- Skull & scalp:** For Metastasis
- Eyes:** For Pallor, Jaundice and Oedema at upper eye lid
- Mouth:**
 - Oral cavity:** for Foetor hepaticus as in (L.C.F)
 - Lip:** Pallor or Peripheral cyanosis
 - Tongue:** Glossitis, Central cyanosis
- Endemic Parotitis:** common with Bilharziasis.

**II. NECK:** V + L + Spider Naevi.**III. UPPER LIMB:**

- ★ **Hand** → Palmar Erythema
 Q: What is meant by it? (See Q: 8)
 → Flapping Tremors as in (L.C.F)

Palmar Erythema

★ **Spider Naevi:** (See Q: 9)★ **Pulse:** Hyperdynamic in Anaemia as in (L.C.F)★ **Clubbing fingers:** Q: What are the degrees? (See Q: 10)**IV. LOWER LIMB:** → Oedema as in (L.C.F)

→ Dorsalis pedis artery pulsation.

V. CHEST: → Sternum: for Tenderness e.g. leukaemia.

→ Gynaecomastia & Spider Naevi as in (L.C.F)

**VI. SCROTUM** → For Testicular atrophy as in (L.C.F)

PR&PV → differentiate gynecological problems from pelvic A.

III. LOCAL EXAMINATION○ **PROPER POSITION**

- The patient should lie flat on his back with knee (flexed to relax abdominal muscles)
- The Examiner should be at Rt. side of the patient.



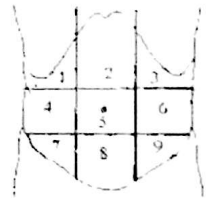
Position of Examination

○ **PROPER EXPOSURE**

The patient is exposed from Nipple to Mid Thigh to expose Hernia orifices

The Abdomen is divided into (9 Regions) by:★ **2 Horizontal planes**

- The upper one:** Trans-pyloric plane or sub-costal plane (midway between Supra-sternal notch and Symphysis pubis).
- The lower one:** Inter-crestal or inter-tubercular (Passes through the upper border of the iliac crest)

★ **2 Vertical planes:** Mid-clavicular line★ **INSPECTION**★ **Anterior Abdominal wall**

- A. Vital Triad. (3 Signs)**
- B. Middle line (7 Signs)**
- C. Sides (7 signs)**

A. Vital Triad**1. Movement with Respiration**

- Normally** → Freely mobile
- No movement** → Peritonitis.
- Decreased movement** → Tense Ascites.

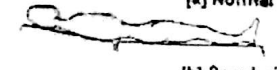
منزوي تنفس
 تحرک - abdominal wall
 عدم تحرک - abdominal wall

**2. Contour of the Abdomen**

- Normally** → Preserved waist.
- Scaphoid** → Starvation or Dehydration.
- Bulging** → Localized = Organ swelling. or Diffuse = S F



[a] Normal



[b] Scaphoid



[c] Distended

3. Bulging Masses.**But Don't Forget**

- To DD **Intra-abdominal** From **Extra-abdominal Masses**
 By contraction of abdominal muscle if mass (↓) in size this means → **Intra-abdominal Mass**
- Movement with Respiration** → Moves up & down with Respiration means → **Intra-abdominal Mass**
- Pulsation of mass**

B. Middle line 7 signs

① Sub-costal Angle

- **Normally** → Acute to right angle (70-90°)
- Obtuse angle → e.g. Ascites.

② Epigastric Pulsation

- Aortic (Thin, AR or Aneurysm)
- Rt. ventricle (Hypertrophy or Cor-pulmonale)
- Hepatic (TI, TS or Haemangioma)

③ Visible Peristalsis

- Small Intestinal obstruction: (Step ladder)
- Pyloric Obstruction: (Lt to Rt)

④ Divercation of Recti (Rising Test) : Normally Absent If +ve It is due to ↑ (I.A.P) e.g. Malignant's Bulging (Fantom hernia)

⑤ Umbilicus

a) Site:

- **Normally** → Midway between Xiphisternum & Symphysis pubis
- Pushed downwards → (Ascites, Gastric, Hepatic, Splenic masses)
- Pushed upwards → (Pelvi-abdominal masses)

b) Shape:

- **Normally** → Inverted
- Everted → If ↑ (I.A.P).

c) Hernia: If present shows Expansile impulse on cough.

d) Dilated Veins (Caput Medusa) → Portal hypertension (veins away from umbilicus)

e) Skin Pigments → The most common is Dirts

f) Nodules around Umbilicus (Sister's Josef Nodules).

- Breast cancer, GIT cancer & Liver cancer

g) Discharge

- Pus In Inflammation.
- Stool In Intestinal fistula.
- Urine In Patent Urachus

h) Ulceration.

i) Scars

⑥ Supra-public Hair Distribution

- **Normally** → Male : Triangular with apex towards umbilicus.
- Female: upper horizontal line.
- Feminine distribution → as in (L.C.F)

⑦ External genitalia e.g. Mass of cord.

C. Side 7 signs

① Scars

- Site & Direction & Length
- Healing 1ry or 2ry Intention. (for DD) (See Q: 11)
- Impulse on cough (Incisional hernia)

② Scratch Marks: In obstructive jaundice 2ry to Purities i.e. ↑ bile salts

③ Special Pigmentation: e.g. Ecchymosis as in (L.C.F)

④ Striae. (due to rapid stretching of abdominal wall so rupture of elastic fiber).

• Types → Striae Alba: obesity, Ascites.

→ Striae Rubra: Cushing syndrome or Steroid therapy.

⑤ Dilated veins

Q: How to DD visible veins? (See Q: 12)

• Causes

- a. I.V.C. obstruction → fills from below to upwards.
- b. S.V.C. obstruction → fills from above to downwards.

• For DD (Portal Hypertension & IVC obstruction)

By distribution & direction.

→ Portal Hypertension = Around umbilicus & the blood flow away from umbilicus.

→ I.V.C. obstruction = lateral & below to umbilicus & the blood flow towards umbilicus.

• So for DD

→ Select vein below umbilicus and examine the direction of flow

⑥ Hernia Orifices

⑦ Breast

a. Atrophy of female breast → as in (L.C.F)

b. Gynaecomastia

• DEFINITION ☆ Bilateral & Tender Enlargement of the male breast due to hypertrophy of the glandular tissues (i.e. like a Disc)

• CAUSES: ☆ L.C.F because of ↑ Oestrogen.

☆ Drugs as Spironolactone

NB. Don't forget: Inspection of 4 backs

1. Back of patient: For
2. Back of scrotum: For T.B sinus.
3. Back of breast: For Monelial infections.
4. Back of knee: For Becker Cyst

Deformities
Tenderness
Scars

Kyphosis
scoliosis
Kypho-scoliosis

* PALPATION

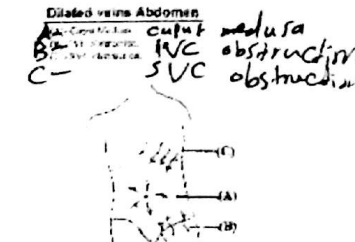
TECHNIQUE OF PALPATION

• Relax the abdominal wall by (ask Pt. to flex L.L).

• It Should be done with warm, gentle hand to avoid gurdng of abdomen & using flexor surface of fingers.

Q: For DD Gurdng & Rigidity? (See Q:13)

• Starting away from area of complaint as far as possible and proceed shaped manner then the affected area is the last one.



Superficial Palpation

- To get patients confidence
- To detect
 - Superficial swelling
 - Tenderness
 - Rigidity (in Rt iliac fossa in G in Rt hypo)

Deep Palpation

- For any abdominal swelling.
- For abdominal organs as:
 - Liver & Gall bladder
 - Spleen
 - Kidney
- For LNs

[A] **Abdominal Swelling** TMSEC D As any swelling But

N.B ① Mobility may be in **one direction** as in mesenteric cyst
 ② In Splenic or Hepatic swellings you can't insinuate your hand between the swelling and costal cartilage.

[B] For L.N See chapter 12

[C] **Abdominal organs**

1. LIVER

- ① **Upper border:** Hepatic dullness detected by **Heavy** percussion.
- ② **Lower border:** Detected by palpation and **Light** percussion

I. Ordinary Technique

- ★ Rt. Lobe: From the Rt. Iliac Fossa upwards
- ★ Lt. lobe: Middle line, Midway between umbilicus and xiphoid process or a hand breadth below the xiphoid

II. Bimanual Technique

- Where the liver edge can be made more prominent.
- ★ By putting the Lt. hand under the lower ribs and lifting them forwards.

III. Hooking Technique

- ★ If shrunken liver (patient in supine position) as in
 - ① Stage III & IV
 - ② Liver Cirrhosis

IV. Dipping Technique

- ★ If Tense Ascites we put the fingers on the abdomen by a quick push the abdominal wall is depressed to displace fluid and hit the organ

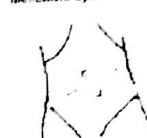
N.B. Character of liver

- Intra-abdominal swelling at **Rt. hypochondrium**.
- Moving up & down with **Respiration**.
- Rounded border** (Except: If cirrhosis) It is sharp.
- Dull and continuous with hepatic dullness.

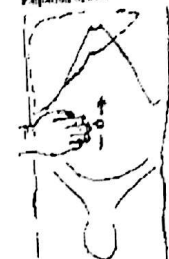
N.B. Normal Liver Span

- ★ Middle line 4 - 8 cm
- ★ Rt. MCL = 8-16cm.

Mesenteric cyst



Palpation of liver



ESCT

3 SECT

Then Comment on: (7)

- Site:** → • Rt. hypochondrium.
- Size:** → • Normally (not felt) below the costal margin
 → • Enlarged Patient's finger breadths below costal margin
 → • Shrunken: As in liver cirrhosis
- Edge:** → • Normally → Rounded.
 → • Sharp → If liver cirrhosis
- Consistency:** → • Soft → Usually.
 → • Firm → Liver
 → • Hard → Malignancy.
 → • Cystic → Amoebic abscess.
- Surface:** → • Smooth → Usually.
 → • Irregular → liver cirrhosis
 → • Nodular → malignancy
- Tenderness:**

1. Congestive H.F.
2. Malignant Liver.
3. Amoebic hepatitis.
4. Infective hepatitis.
5. Pyaemic abscesses.
6. Acute (V.O.D)

2. SPLEEN

I. Bimanual Technique

- ★ From Rt. iliac Fossa then from Lt. iliac Fossa
- Q: Why enlarged spleen crosses the middle line? (See Q: 15)

II. Hooking Technique

III. Percussion of Traube's area

TRAUBE'S AREA

Definition:

An area of Tympanic Resonant overlying the air bubbles of stomach.

Boundaries:

- **Lt.**: Anterior margin of Spleen.
- **Rt.**: Inferior border of Liver.
- **Above**: Lower border of Lt. Lung.
- **Below**: Left costal margin.

Causes of Increase it's size

- ① Splenectomy
- ② Shrunken liver
- ③ Dilated stomach.
- ④ Lt. basal collapse.

Causes of Dullness

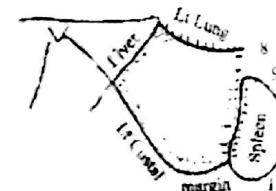
- ① Splenomegaly
- ② Hepatomegaly (Lt. lobe)
- ③ Full stomach or tumors.
- ④ Lt. basal (consolidation or effusion)
- ⑤ Abdominal distension (Ascites, Tumors, Pregnancy)

IV. Dipping Technique In Tense Ascites.

N.B. Characters of spleen

- Intra-abdominal Swelling at **Lt. hypochondrium**.
- Moving up & down with **Respiration**.
- Rounded lower pole** with **sharp** anterior edge.
- Dull and continuous with Traube's area dullness.
- Presence of **Notch**
- Does not fill and can't be pushed in the Renal angle.

Palpation of spleen



★ Then Comment on: (7)

1. **Site** : → • Lt. hypochondrium.
2. **Size** : → • Normally (not felt below the costal margin)
→ • If enlarged → enlarged at least 3 times.
3. **Border** : → • Normally → Rounded lower pole & Sharpe anterior edge with notch
Exg Q: Causes of absent or multiple notch? (See Q: 16)
4. **Consistency** : → • Soft → Malaria or Septicaemia.
→ • Firm → ~~B~~ Splenomegaly
5. **Surface** : → • Smooth → ~~B~~ Splenomegaly
6. **Tenderness** : → (T.I.B.S)
(Typhoid - Infective Endocarditis - ~~B~~ rucellosis - ~~S~~ epticaemia)
7. **Pitting Sign** : → Chronic Myeloid leukaemia.
Q: Causes of huge Splenomegaly? (See Q: 17)

3. KIDNEY

I. Bimanual Technique

- ★ **Lt. kidney** The Rt. hand is placed inferiorly in the Lt. lumbar region while the Lt. hand is placed Posteriorly in the Lt. loin.
• Normally the Lt. kidney not felt.

- ★ **Rt. kidney**: Same way but with opposite hands.
• Normally lower pole of Rt. kidney is palpable in thin patient.

Bimanual palpation of Kidney



II. Ballottement Technique

- ★ Only if kidney is Enlarged
To DD it from spleen or liver.

N.B. Characters of kidney Swelling

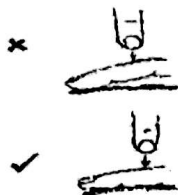
1. Intra abdominal swelling at lumbar region.
2. Moves up & down with respiration.
3. Rounded border.
4. There is band of resonant over the swelling.
5. Can be pushed in the renal angle.
6. Ballot freely anterior and posterior. How?

Congenital : Polycystic kidney
Traumatic : Haematoma
Inflammatory : Pyonephrosis
Neoplastic : Hypernephroma
Obstructive : Hydronephrosis.

N.B. : The Causes of Renal swellings

★ PERCUSSION

1. Use the wrist (Not Elbow Joint).
2. Use the Middle finger of Rt. hand opposite middle phalanx of opposite Middle finger.
3. The lower finger should be parallel to the expected border of the percussed swelling starting from Resonant area.
4. Don't Rest your finger on the other as this Damp the note.



Value of Percussion

- I. Defining The boundaries of abdominal organs and masses.
- II. Detection of Ascites.
- III. To DD Ascites from ovarian cyst and Intestinal obstruction.

I. DEFINING THE BOUNDARIES OF ABDOMINAL ORGANS & MASSES

- ① **Liver** → Upper border = Hepatic dullness = **Heavy** percussion.
→ Lower border = **Light** percussion.
- ② **Spleen** → To detect impalpable Splenomegaly (<3 times normal size)
→ To confirm palpable spleen → dullness extends from it, lumbar region
- ③ **Traube's area** "See before"

II. DETECTION OF ASCITES (depending on amount)

- ① If **large Amount** (under tension) [Transmitted Thrill] →
TECHNIQUE: The Patient's hand is put at mid line of the abdomen (should be firmly), to dampen any impulse which transmitted through the fat of abdominal wall.
- ② If **Moderate Amount** [Shifting Dullness] < 1.5L →
Should be done in both side.
Q: Causes of unilateral shifting dullness? (See Q: 18)
- ③ If **Minimal Amount** [Knee- Elbow position] < 0.5L →
perussion for minimal Ascites
- ④ **Ask about sonar**
Absence of shifting dullness or fluid thrill or both does exclude Ascites.



III. To DD ASCITES FROM OVARIAN CYST & INTESTINAL OBSTRUCTION

1. **Ascites** → Dullness over flanks.
→ Resonant at & above umbilicus.
2. **Ovarian Cyst** → Resonant in flanks.
3. **Intestinal Obstruction** → Resonant all through



★ AUSCULTATION

• Indications

1. **Intestinal Sound** (Rt. Iliac Fossa)
2. **Rubs** (Peri-splenitis or Peri-hepatitis)
3. **Bruit** on liver or Aorta
4. **Hum** Hepatic (Portal hypertension)
5. **Succession Splash.**

IV. DIAGNOSIS

○ **ANATOMICAL** Splenomegaly or Hepatomegaly

○ AETIOLOGICAL

e.g. portal hypertension 2ry to liver cirrhosis due to Bilharziasis.

What is stage?

- **Stage 1:** Hepatomegaly.
- **Stage 2:** Hepato-splenomegaly.
- **Stage 3:** Splenomegaly + shrunken liver
- **Stage 4:** As 3 + L.C.F. (Ascites or jaundice)

○ FUNCTIONAL

- ① **Liver** → • Compensated.
→ • Decompensated → Vascular (Portal hypertension)
→ Parenchymatous (L.C.F)
- ② **Spleen** → Associated Hypersplenism.

V. TO SIMPLIFY DIAGNOSIS OF SPLENOMEGALY

☆ Splenomegaly + **Portal hypertension** = Liver Cirrhosis.

N.B. Presence of history of **B** suggests = **B** Liver cirrhosis.

☆ Splenomegaly + **Lymphadenopathy** = Leukaemia or lymphoma.

☆ Splenomegaly + **Jaundice** = Haemolytic Anaemia.

☆ Splenomegaly + **Fever** = Typhoid fever.

VI. TO SIMPLIFY DIAGNOSIS OF HEPATOMEGALY

☆ Hepatomegaly + **Portal hypertension** = Liver cirrhosis.

N.B. Presence of history of **B** suggests = **B** Liver cirrhosis

☆ Hepatomegaly + **Lymphadenopathy** = Leukaemia or lymphoma

☆ Hepatomegaly + **Jaundice** = Obstructive or haemolytic jaundice.

☆ Hepatomegaly + **Fever** = Viral hepatitis

☆ Hepatomegaly + **Iry Cancer** = liver metastasis.

special signs of **obstructive** appendicitis
obturator & psoas signs.
special signs of liver & spleen
Boa's sign & murphy's sign



ORAL
DISCUSSION

ABDOMEN

QUESTIONS OF SHEET

Q1: What are the hazards of Alcohol?

- **Stomach** : Peptic ulcer & Atrophic gastritis.
- **Liver** : Alcoholic liver cirrhosis.
- **Parotid** : Chronic endemic Parotitis.
- **L = Lymph** : ↑ Pain at site of Hodgkin's disease.
- **N = Nerve** : Peripheral neuritis.

Q2: What is meant by 'Hypersplenism' ?

- Pancytopenia [↓ R.B.Cs, ↓ WBCs & ↓ platelets]
- Splenomegaly.
- Active Bone Marrow.

Q3: What is the difference between Fresh Haematemesis and coffee like Haematemesis?

- **Fresh Haematemesis**: Oesophageal cause.
- **Coffee Haematemesis**: Gastro-duodenal cause.

Q4: What are the DD between Haemoptsis & Haematemesis?

	Haemoptsis	Haematemesis
1. History	Chest disease	GIT disease
2. Preceded by	Cough	Vomiting
3. Followed by	Blood stained sputum	Melena
4. Blood	- Bright red - Alkaline - With frothy sputum	- Dark red - Acidic - With food particle

Q5: What are the commonest 2 causes of Haematemesis?

- ☆ Oesophageal Varices.
- ☆ Bleeding Peptic Ulcer.

Q6: What are the causes of Black Stool?

- Melena.
- Ingestion of Iron, Charcoal
- Treatment by Bismuth (Cytoprotective for Peptic ulcer)

Q7: What are the causes of Bleeding per Rectum?

- Piles
- Anal Fissure.
- Anal Carcinoma.
- **B** Polyps.

Questions on General Exam.

Q8: What is meant by Palmar Erythema?

Palmar Erythema means Redness of

→ Head of metacarpal bone.

Thinner & Hyotheaner with Central Pallor

It may be due to ↑ Oestrogen.

Palmar Erythema



Q9: What is meant by Spider Naevi?

Spider Naevi Dilated arterioles with radiated Capillaries.

• **The cause:** It may be due to ↑ Oestrogen.

• **The site:** On SVC distribution i.e. Face, Neck, Upper limb & Upper part of chest up to nipple.

• **Examination:** By compression on the center by tip of pen leads to
→ Blanching of radiated capillaries.

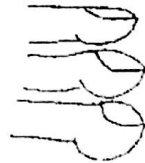
Q10: What are the degrees of clubbing fingers?

• **1st degree:** Obliteration of nail bed angle

• **2nd degree:** Parrot peak like.

• **3rd degree:** Drum stick like.

• **4th degree:** 3rd degree + Tender & Thick ends of long bone (Radius & ulna)



N.B. Clubbing = Proliferation of C.T under nail bed due to Toxemia & Hypoxia

Questions on Local Exam.

Q11: What is the DD between 1ry & 2ry Intention of Scar?

➤ **1ry Intention:** Fine linear scar with Minimal contracture & keloid

➤ **2ry Intention:** Ugly disturbed scar with Excess contracture & keloid.

Q12: How can you differentiate Visible veins from Dilated veins?

☆ Visible veins tortuous

Q13: What is the DD between Girding & Rigidity?

➤ **Girding** = Nervous patient, usually unable to relax his abdominal wall.

➤ **Rigidity** = Hard abdominal wall & absent it's movement and Intestinal sound.

Q14: Which joint of hand is used for Dipping Technique?

☆ Metacarpo-phalangeal joint.

Q15: Why Enlarged Spleen crosses the Middle line?

☆ Because of Phrenico-Colic ligament.



Q16: What are causes of Absent & Multiple Splenic Notch?

A. Causes of Absent notch

- Congenital
- Adhesion
- Tumor
- Infarction

B. Cause of Multiple notches

- Fibrosis only

Q17: What are causes of Huge spleen [Cross Middle Line]?

➤ B [Egypt]

➤ Kala Azar [Iraq]

➤ Thalassemia Major

➤ Polycythemia Rubra Vera

➤ Chronic Malaria

➤ Chronic Myeloid Leukaemia

➤ Lipid Storage Disease

➤ Splenic Sarcoma.

Q18: What are causes of unilateral shifting dullness?

➤ Ovarian Cyst.

➤ Intestinal Obstruction.

➤ Encysted T.B Peritonitis.

Questions on Management

Q19: What are the investigations done for Hepatic Schistosomiasis?

(I) Investigations To Detect Schistosomal Aetiology:

➤ **Urine & stool:** For Schistosomal Ova

➤ **Sigmoidoscopy:** With Rectal & Colonic Biopsy.

➤ **Skin Test and Complement Fixation Test (CFT)** to detect presence of antibodies.

N.B.: Don't Forget examination of colon because of Bilharzial Pericolic mass.

(II) Investigations To Detect Portal Hypertension:

➤ **Oesophageal Endoscopy** For Varicose.

➤ **Visualization of portal system:** Trans-Hepatic Venography.

➤ **Estimation of portal pressure:** Wedged Hepatic Vein Pressure.

(III) Investigations To Detect liver Function

Liver Function Test (L.F.T).

Q20: What are the main Treatment of 'Hepatic Schistosomiasis'?

- Treatment of Portal Hypertension & Ascites
- Treatment of Active Schistosomiasis
- Treatment of Hepatic Encephalopathy



Q21: What are the indications of Splenectomy in Egyptian Splenomegaly?

1. As a part of Splenectomy vasoligation producer
2. Hypersplenism
3. Huge spleen

Q22: What is the Normal life span of Platelets?

☆ 10 days

Q23: Describe the surface anatomy of the Spleen?

☆ It lies parallel to the 9th, 10th and 11th ribs

Q24: What is wandering spleen [Splenic Ectopica]?

☆ It occurs due to laxity of Gastro-splenic & Phrenico- colic ligament

Q25: What are the difference between Congestive Splenomegaly & Malignant Spleen?

Congestive spleen	Malignant spleen
Firm	Hard
Regular surface	Irregular surface
Sharp border with a notch	Rounded border & no notch
Spleen Enlarges medially	Spleen Enlarges downwards (infiltration)

Q26: What is Banti Syndrome?

☆ It is Vascular malformation of the portal vein leading to portal hypertension

Q27: What is Budd- Chiari syndrome?

☆ It is occlusion of the hepatic veins by Thrombosis or Malignant tumor

Q28: What is Kenawi Sign?

☆ Auscultation, the stethoscope being applied beneath the xiphoid process, reveals venous hum louder on inspiration. The phenomenon is due to engorgement of the Splenic vein & the hum is louder during inspiration the spleen is then compressed

Q29: What is the most accurate investigation for detection of liver pathology?

☆ Liver biopsy not done routinely, Vit. K for 5 days & Prothrombin concentration should be 100%

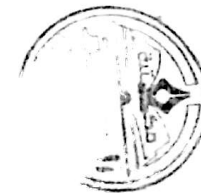
Q30: What is the technique of liver biopsy?

- a. Percutaneous Needle Biopsy
- b. Tru-cut Needle Direct Laparoscopic Biopsy

Good luck



Jaundice



Chapter 8

JAUNDICE CASE

"INTRODUCTION"

* DEFINITION

- ⊗ Jaundice is Yellowish Discoloration of the Tissues & Body fluid Except [Brain, CSF, Tears, Saliva & Milk] due to excess Bilirubin in blood.

(Normal level of Serum Bilirubin $<1 \text{ mg\%}$)

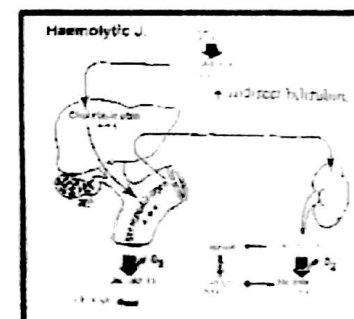
- ⊗ Jaundice occurs if serum level of Bilirubin $> 3 \text{ mg\%}$
So if serum level of Bilirubin 1-3 mg% it is called..... (See Q: 1)

* TYPES OF JAUNDICE

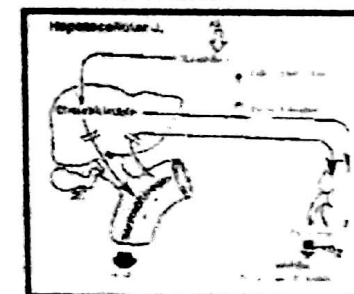
1. Haemolytic jaundice* PATHOGENESIS: ($\uparrow$ Haemolysis of RBCs)

- Liver can't pick Haemobilirubin completely so
→ $\uparrow$ Indirect Bilirubin
- Also $\uparrow$ Cholebilirubin leads to:
 - ① $\uparrow$ Stercobilinogen → Dark stool
 - ② $\uparrow$ Urobilinogen → Orange urine

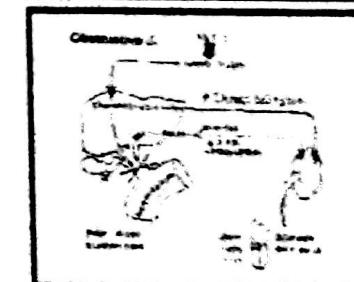
N.B: Orange consider normal urine

* AETIOLOGY: Causes of Haemolytic Anaemia (See Q: 2)2. Hepato-cellular jaundice* PATHOGENESIS:

- Liver can't pick or excrete all bile pigments
So → $\uparrow$ Haemobilirubin = $\uparrow$ Indirect Bilirubin
→ $\uparrow$ Cholebilirubin = $\uparrow$ direct Bilirubin
- Also $\uparrow$ Cholebilirubin leads to
 $\uparrow$ Urobilinogen Dark urine
- Because liver can't excrete bile to intestine relative
→ $\downarrow$ Stercobilinogen → Normal stool

* AETIOLOGY: Causes of (L.C.F. + V.H) (See Q: 3)3. Obstructive jaundice* PATHOGENESIS:

- Cholebilirubin is prevented from reaching to intestine so it regurgitates into
 - ① Blood → $\uparrow$ direct Bilirubin
 - ② Kidney → No Urobilinogen but
 $\uparrow$ Bilirubin Dark urine
- $\downarrow$ Stercobilinogen → pale stool

* AETIOLOGY → See later ☞

CAUSES OF OBSTRUCTIVE JAUNDICE

[A] Intra-hepatic Obstruction :

Liver Tumor.

[B] Extra-hepatic Obstruction :

i.e. Common Bile Duct Obstruction

• Lumen

- ① Stone
- ② Blood.
- ③ Parasite e.g. Ascaris.
- ④ Papillary Stenosis.

• Wall

- ① **Congenital** : Biliary Stenosis (supra, retro or infra-duodenal).
- ② **Traumatic** : Stricture following Cholecystectomy or Instrumental procedures of CBD.
- ③ **Inflammatory** : Ascending Cholangitis.
- ④ **Neoplastic** : Cholangiocarcinoma (Klatskin's Tumor)

• Outside

- ① L.N.s metastasis at Porta-hepatis.
- ② Cancer head pancreas.
- ③ Peri-ampullary carcinoma of 2 part of duodenum.
- ④ Duodenal Diverticulum.

The common 2 causes are: Calcular & Malignant Obstructive Jaundice

Don't Forget

Haemolytic jaundice

☆ ↑ Indirect Bilirubin + Dark stool + Normal urine

Hepato-cellular jaundice

☆ ↑ Indirect & Direct Bilirubin + normal stool + Dark urine

Obstructive jaundice

☆ ↑ Direct Bilirubin + pale stool + Dark, Frothy urine.

* METABOLISM OF BILE SALTS

* **FORMATION** Bile salts formed by Hepatocyte then passes to GB to be concentrated then → C.B.D. → Intestine.

* EFFECT :

- **Systemic** : - Heart → ↓ HR.
- Skin → Itching (Why?) (See Q: 4)
- Urine → Frothy & ↓ specific gravity.

• Local:

1. Absorptive for fat & fat soluble Vitamins (A,D,E,K)
 - If [1] ↓ → Steatorrhoea, Bleeding due to ↓ Vit. K
2. Bacteriostatic function.
 - If [2] ↓ → Fermentation → Offensive & Bulky stool.
3. Motor effect → ↓ Motility of intestine.
 - If [3] ↓ → Constipation

Intra-hepatic causes

Extra-hepatic causes

present history:- 1-OCD 2-urine & stool anal.
3-pruritis 4-pain 5-FWANNV- 6-LBLB
7-etiology 8-Trauma
I. **JAUNDICE SHEET** ulcers or GB symptoms

PERSONAL HISTORY	Obstructive jaundice			Hepato-cellular J.		Haemolytic jaundice
	Calcular	Malignant	Intra Hepatic	V.H	Cirrhosis	
• Age & Sex	Middle 10 female	Old 10 male	Any	Any	Any	Children
• Occupation.	---	---	---	Doctors	farmers	---
• Special habits	---	---	---	---	Alcohol	---
* COMPLAINT	[Yellowish Discoloration of the skin] or any symptoms of jaundice					
* PRESENT HISTORY	Attacks					Crisis
1. O.C.D.	Sudden	Gradual	Acute	Acute	Gradual	Sudden
- Onset	Intermittent	Progressive	Regressive	Regressive	Progressive	Intermittent
- Course						
2. Urine	[Dark and frothy urine]			Dark		Normal
3. Stool	[Bulky, offensive and Steatorrhoe]			Normal		Dark
4. Anorexia & nausea & vomiting	No	No	No	+ve	No	Crisis
5. Fever	Charcot's	No	No	Pre-icteric	No	Crisis
6. Pain	[Biliary] Rt shoulder Colicky Mild Fatty meals Antispasmodic	[Epigastric] Back Boring Severe Lying down Leaning forward	[Dull ache]	[Dull ache]	---	Crisis
- Radiate						
- Character						
- Degree						
- ↑						
- ↓						
7. Pruritis	+ve	+ve	+ve	---	---	---
8. Wt. loss	---	+ve	---	---	---	---
9. L.B.L.B.	---	+ve	---	---	---	---
10. Aetiology	[Bleeding tendency from orifices] but improved by Vit. K (why?)			[Bleeding tendency] but not improved by Vit. K		Large ulcer Anaemia
* PAST HISTORY	- Fatty dyspepsia - Colics	---	- Halothane - PAS. INH	Injection	- Alcohol	Blood transfusion
* FAMILY HISTORY	---	---	---	---	+ve if	+ve

- similar condition - operation
- Blood transfusion - disease (hepatic & S)
- drug intake

II. GENERAL EXAMINATION

A. VITAL SIGNS

"See Page 2"

- * **Temp:** Increased with Charcot's fever (i.e. Calculus Obstructive J).
- * **Pulse** → ↓ HR (Bradycardia) due to bile salts (i.e. Calculus Obstructive J).
→ Water Hammer pulse → (L.C.F.) (i.e. Hepato-cellular J)

Q: When HR increased with Calculus obstructive J? (See Q: 5)

- * **A.B.P.** Decreased 2ry to ↓ HR.
- * **R.R.**

B. GENERAL EXAMINATION (A.B.C.D.E.F) "See Page 2"

- A = Appearance** → Ill with Cachexia as in cancer head pancreas
- B = Built** → Under-built → with malignancy.
→ Obese → (5F) with (Calculus Obstructive J)
- C = Conscious** → Drowsiness → with (L.C.F)
- D = Decubitus** → Leaning forward → with cancer head pancreas
- E = Emotion** → Alert → with associated Cholangitis.
- F = Face** → Toxic face → with associated Cholangitis.



C. SYSTEMIC EXAMINATION

(See Abdomen)

- I. HEAD:** → As "Abdomen"
→ Special care of Jaundice [Sclera at day light] →
- Q: What are other sites for seen of jaundice? (See Q: 6)



N.B : - Olive Green = Obstructive jaundice.
- Orange Yellow = Hepato-cellular jaundice.
- Lemon Yellow = Haemolytic jaundice.

- II. NECK:** → As "Abdomen"
→ Special care → Lt Supra-clavicular L.Ns (Cancer pancreas)
- III. CHEST:** → As "Abdomen"
→ Special care → Scratching Marks "OJ"
- IV. UPPER LIMB:** → Special care of Ecchymosis "Bleeding Tendency"
- V. LOWER LIMB:** → Special care of Haemolytic ulcer (at shin of tibia) → Sick cell Anaemia
→ Thrombophlebitis "Trousseau Sign" if cancer pancreas.

Q: What is the other Trousseau sign? (See Q: 7)

- VI. PR & PV:** → For Cancer Rectum. (See Q: 8)

III. LOCAL EXAMINATION

[See local examination of Abdominal case]
BUT DON'T FORGET

	Obstructive jaundice			Hepato-cellular J.		Haemolytic jaundice
	Calculus	Malignant	Intra Hepatic	V.H	Cirrhosis	
[1] Liver	• Enlarged • Firm • Smooth	• Enlarged • Hard • Nodular • Tender	• Enlarged • Firm • Smooth • -----	• Enlarged • Soft • Smooth • Tender	• Shrunken • Firm • Irregular • -----	HSM
[2] Spleen					Enlargement	
[3] Ascitis		Present			Present	
[4] GB		According to Courvoisier Law				

In Calculus O.J

The gall bladder is contracted & non palpable (80%) due previous Cholecystitis.

But in (20%) the gall bladder is dilated and healthy either due to metabolic stone or stone in the cystic duct Causing mucocele of G.B or Empyema if infected.

In Malignant O.J

The gall bladder is dilated & healthy in (98%).
But in (2%) gall bladder doesn't dilated due to

- ① Associated Chronic Cholecystitis
- ② The L.Ns from Cancer Head pancreas at Porta-hepatis
- ③ Previous Cholecystectomy



Palpation of the Gall bladder (G.B.)

TECHNIQUES OF PALPATION

1. As the liver (Ordinary methods)
2. **Murphy's** = Chronic Cholecystitis → Palpate G.B Then Ask pt. to take deep breath .. The Patient catch her breath because of pain.

CHARACTERS OF GALL BLADDER

1. Intra abdominal swelling at Rt Hypochondrium
2. Moving up & down with Respiration
3. Pyriform or Rounded in shape
4. Dull on percussion with hepatic dullness.
5. Cystic in Consistency (Hard in malignancy)

JAUNDICE**QUESTIONS OF INTRODUCTION****Q1: What is meant by Sub-icteric Jaundice?**

☆ If serum level of Bilirubin 1-3 mg.%

Q2: What are the causes of Haemolytic Jaundice?☆ **Corpuscular:** • Membrane defects.

• Hb defects.

• Enzyme defects.

☆ **Extra-corpuscular:** • Hypersplenism

• Infections as Malaria

• Chemicals as Snake Venom.

Q3: What are the causes of Hepato-cellular Jaundice?☆ **Causes of (L.C.F.)** *liver cell failure*

• Infections: V.H., IMN, & Yellow fever.

• Chemicals: ~~Halothane~~, INH & DDT.

• Liver cirrhosis & Chronic active hepatitis

☆ **Causes of (V.H.)** HAV, HBV, HCV, HDV & HEV.**Q4: Why increasing bile salts associated with itching?**

☆ Because Bile salts → ↑ of Nerve endings → Itching

Questions on Examination**Q5: When HR increased with Calcular obstructive Jaundice?**

☆ If Associated Cholangitis.

Q6: What are other sites for seen of Jaundice?

• Sclera

• Soft palate

• Under surface of tongue

• Nail bed

Q7: What is meant by 'Trousseau sign' (In surgery)?

○ Thrombophlebitis with cancer pancreas.

○ Sign with Tetany.

Q8: Why we Examine PV & PR in case of Jaundice?

☆ Because, Cancer rectum → L.Ns in Porta-hepatic → O.J.

Good luck**Ischaemia Sheet**

*intermittent claudication - cramping pain & weakness in the legs esp. the calves on walking that disappear after rest, associated with inadequate blood supply to the muscles.

Chapter 9

105

ISCHAEMIA & GANGRENE

* DEFINITION

Ischaemia means ↓ Blood Supply to Part, Tissue or Organ.

* TYPES

(A) Acute Ischaemia: → "Sudden Onset"

- **Embolism** → [History of Cardiac Trouble]
- **Arterial injury** → [History of Trauma or Accident]
- **Acute thrombosis** → [History of Intermittent Claudication].

N.B: C/P of Acute Onset = [6 Ps]

[Paralysis - Pain - Pallor - Pulselessness + Paraesthesia + Progressive coldness]

So { **Muscle** → Irreversible damage occurs after 6 hours
Skin → Moist aseptic gangrene occurs after 24 hours
 Q : Why is the gangrene being moist Aseptic ? (See Q: 1)

(B) Chronic Ischaemia: → "Intermittent claudication"

- **Atherosclerosis** [The commonest].
- **Burger's Disease**
- diabetic ➤ **foot**

inflammation of artery



	(I) Atherosclerosis	(II) Burger's disease
(1) Incidence	• Common (> 40 years). • Male > Female	• Rare (< 40 years). • Male > Female
(2) Pathology	• Atheroma & Thrombosis. • Calcification.	• Inflammation & Thrombosis • No Calcification
(3) C/P	• No Upper limb Manifestations • No Superficial Thrombophlebitis	• Upper & lower limb are involved. • Superficial Thrombophlebitis.
	• Calf Claudication. • Absent (Popliteal pulse).	• Sole Claudication. • Present (Popliteal pulse).
	• Late Rest pain & Massive gangrene • No Raynaud's Phenomenon	• Early Rest pain & limited gangrene • Raynaud's Phenomenon.
(4) Investigations	➤ X-ray ➤ Arteriography	
	• Calcification. • Irregular Narrowing & Distal Run off.	• No calcification. • Not needed because of Distal block
(5) Treatment	• Stop Smoking. • Arterial by pass (The Main).	• Stop Smoking • Arterial bypass (No Value).
	• Sympathectomy (No Value). • Urgent High Amputation	• Sympathectomy (The Main). • Conservative Amputation

Don't Forget

(1) Burger's disease is associated with Raynaud's phenomenon.

(2) For DD

○ Raynaud's disease (Unknown cause)

Young female + Bilateral + Cold weather.

○ Raynaud's phenomenon = (known cause) 2ry to

☆ Occupations using Vibrating tools as Drills, Typists or Pianists

☆ Treatment: Change occupation (No value of sympathectomy)

(III) Foot

A. Atherosclerotic ischaemia & gangrene (Macroangiopathy)

○ Gangrene is dry but infection convert it into moist.

○ Sympathectomy is contraindicated. Why? (See Q: 2)

B. Infective gangrene (Microangiopathy)

[The story] → Minor trauma + High level of blood sugar.

○ Because

1. Neuropathic factor: ♂ Neuritis (impaired sensation).

2. Local ischaemia: ♂ Microangiopathy.

3. Cellular factors: ♂ → (Decrease cell vitality).

[So Tissue loaded by sugar i.e. Good media for infection]

○ Treatment: Draining pus + controlled D.M.

TTT OF CHRONIC ISCHAEMIA

A. Conservative [No Rest pain + Distal Run off]

B. Endovascular surgery:

☆ Percutaneous Transluminal balloon Angioplasty (PTA)

☆ Arterial Stent.

☆ LASER Angioplasty.

Less Invasive

C. Operative [Surgical]

Rest Pain

Run off

(Arterial Reconstruction)

Thrombo-end
Arterectomy

Arterial
By pass

Fit

Anatomical
By pass

Unfit

Extra-Anatomical
By pass

No Run off

(No Arterial Reconstruction)

Profoundo-
plasty

Fit

Surgical

Sympathectomy

Unfit

Chemical

Gangrene

±
Toxaemia

Amputation

I. ISCHAEMIA SHEET

* PERSONAL HISTORY

1. Name

2. Age

→ Adult (Burger's & Raynaud's diseases).

→ Elderly (Atherosclerosis).

3. Sex

→ Male (Burger's & Atherosclerosis).

→ Female (Raynaud's disease).

4. Residence: Raynaud's disease in cold countries.

5. Occupation: Raynaud's phenomenon as vibrating instruments as typist etc...

6. Marital status: Impotence with Le rich syndrome (See Q: 4)

7. Special habits: Smoking with Burger's & atherosclerosis.

* COMPLAINT * Pain during walking

* PRESENT HISTORY

I. Analysis of complaint

II. Analysis of Part affected

III. Analysis of Other parts affected

P (Pain).

S (Skin & Sensory changes).

H (Lost Hotness)

C (Color changes & gangrene)

F (Functional changes)

I. Analysis of complaint

1. O.C.D.

2. PAINS

☆ Site

☆ Number

☆ Investigations & ttt (ask about sympathectomy).

☆ Associated L.Ns (if Thrombophlebitis Migrans)

☆ Pain ⚡

	Intermittent claudications Muscle Ischaemia	Rest pain "Nerve Ischaemia"
(1) Characters	Cramp like on walking	Burning pain
(2) Site "depending on occlusion"	<u>Gluteal</u> = Aorto-iliac occlusion. <u>Thigh</u> = Ilio-femoral occlusion. <u>Calf</u> = Femoro-popliteal occlusion. <u>Sole</u> = Popliteo-tibial occlusion	Foot (Dorsum > sole) Why? (See Q: 5)
(3) ↑ by	Walking & warmth	Elevation of limb
(4) ↓ by	Rest	Lowering or uncovered limb or rubbing the dorsum of foot Why? (See Q: 6)
(5) Degree	[Boyd's classification] grade I → ✓✓ grade II → ✓✓ grade III → ✗ stop grade IV → Rest pain	Continuous and Severe i.e. pre-gangrene

N.B.: If pain "Intermittent claudication" you must ask about

(1) Claudication distance: Distance after which the pain is felt. The shorter the distance the advanced ischaemia.

(2) Claudication time: Time after which the pain is felt.

(3) Rest time: Time of rest need to start walking again.

II. Analysis of symptoms related to Part affected

"Press & See How Colour Fades"

P Pain (See before)

S Skin changes: (Trophic changes)

- Loss of hair, Brittle nail and Dry scaly skin.
- Interdigital infection i.e. Tinea pedis.
- Ulceration & Tapering digits.

S Sensory changes:

- Paraesthesia "Gradual loss".
- Tingling or Numbness.

C Coldness (Lost Hotness):

- Cold limb Q: What are causes of false warm limb? (See Q: 7)

C Colour changes: Pallor, Cyanosis or Black discoloration.

Q: Which more dangerous Cyanosis or Redness of ischaemic limb? (See Q: 8)

G & Gangrene: • Ask about causes.

- Lower limb → (Atherosclerosis, D.M, Burger's disease).
- Upper Limb → (Burger's disease or Raynaud's disease).
- For other causes (See Q: 9)

III. Analysis of Symptoms related to Other parts affected

F Functional Changes:

a. Motor disturbance

- ➔ Weakness of muscle i.e. Chronic ischaemia.
- ➔ Paralysis of muscle i.e. Acute ischaemia.
- Q: What is the 1st muscle wasted in L.L.? (See Q: 10)
- ➔ Flexion deformity of knee joint.

b. Sexual disturbance: Impotence Le Riche Syndrome

O Organic Ischaemia:

- ➔ Heart: Angina.
- ➔ Brain: Fainting sensation.
- ➔ Kidney: Pain, Haematuria or Uraemia.
- ➔ Intestine: Colics i.e. intestinal angina.

F F.H.M.A.: If Thrombophlebitis i.e. Burger's disease

L L.Ns: If present this means Thrombophlebitis i.e. (Burger's disease)

* PAST HISTORY

- * Similar condition
- * Important disease as P.M., hypertension, heart diseases etc.....
- * Past H. of Trauma → Senile gangrene.
- Ø gangrene of foot.

* FAMILY HISTORY

- * Raynaud's disease "Same Cold environment".
- * Atherosclerosis.
- * D.M.

EXAMPLE OF

ISCHAEMIA SHEET

* PERSONAL HISTORY

Male patient, 46 years old, Carpenter, from Cairo, Single. He is Chronic heavy smoker, smoke 20 Cigarette per day for 30 years. No other special habits of medical importance.

* COMPLAINT

Pain in both lower limb 16 years ago.

* PRESENT HISTORY

- The Condition is started 16 years ago by claudication pain in Rt. sole, then after 6 months Lt sole also the pain is gradual onset and slowly progressive course.
- The Pain ↑ by walking or warmth and ↓ by rest.
- The pain starts by walking for 500 meters. Then it becomes severe to stop the patient to need about 2 min. rest to restart walking again.
- The condition is worsen now as pain appears after walking 100 meters only and needs about 8 min. rest to disappear.
- After 1 year from the onset, the patient had Traumatic ulcer on dorsum of Rt. foot and healing was delayed and graft from thigh (at same side) was taken.
- There are Trophic and skin changes in form of loss of Hair, scaly skin brittle fissured nails with numbness, Tingling and Parathesia in both feet.
- There are loss of Hotness and Colour changes in form of pallor and sometimes cyanosis on exposure to cold.
- No symptoms suggesting organ ischaemia as Anginal pain, loin pain, Haematuria, Abdominal pain, Fainting or Impotence.
- No symptoms suggesting infection or thrombophlebitis as fever, Headache, Malaise and Anorexia or Local redness.
- The patient was investigated by E.C.G, X-rays and Doppler then Rt lumbar sympathectomy was done. So the condition is slightly improved.

* PRESENT HISTORY

No past history about recurrence, No DM, No hypertension, No T.B, No Bilharziasis, No drug allergy, No previous operations.

* PRESENT HISTORY

No family history of similar condition (Irrelevant)

DIAGNOSIS

A case of [Chronic Ischaemia] most probably Burger's Disease

II. GENERAL EXAMINATION

A. VITAL SIGNS For normal "See Page 2"

- (1) **Temp:** Warm in infected gangrene.
- (2) **Pulse:** [Examine All pulsation].
e.g. Radial pulse for
 - Irregular if A.F.
 - Thickening if Atherosclerosis
- (3) **A.B.P.**
- (4) **R.R.**

B. GENERAL EXAMINATION (A.B.C.D.E.F) "See Page 2"

As Usual but

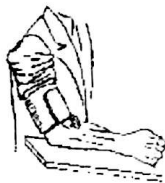
- D = Decubitus** → Flexion deformity of knee if rest pain. (See Q: 11)
- E = E motion** → Haggard → Rest pain
- F = Face** → Toxic → Infected gangrene.

C. SYSTEMIC EXAMINATION

- I. **HEAD & NECK:** → **Scars:** If Cervical Sympathectomy done
→ **Mass:** Cervical Rib or Carotid Aneurysm.
- III. **CHEST:** → Full Cardiac Examination.
- IV. **LOWER LIMB:** → **Redness** If Thrombophlebitis i.e. (Burger's disease)
- V. **ABDOMEN:** → **Mass:** Aneurysm.
→ **Scars:** If lumbar sympathectomy.

III. LOCAL EXAMINATION

* INSPECTION	* PALPATION
(1) Colour Changes	(1) Temperature.
(2) Venous Filling Time	(2) Capillary Circulation Test.
(3) Trophic Changes.	
(4) Gangrene.	
(5) → A Arterial pulsation & Aneurysm.	
(6) → V Venous If Thrombophlebitis.	
(7) → L L.Ns	
(8) → M Movement	



III. LOCAL EXAMINATION

* INSPECTION

[The Patient is Lying down & Expose his both L.L from groin downwards]

1. Colour Changes:

- **Normal Colour** indicates → Mild ischaemia.
- **Postural changes** indicates → Moderate ischaemia.

⊛ **Burger's Test** (Elevate the limb gradually)

- Normally, limb not affected by elevation.
- **Elevation** : of ischaemic limb cause **Pallor**.
- **Lowering** : of ischaemic limb cause **Cyanosis**.

N.B. Burger's Angle: It is Angle at which limb becomes pale on elevation from horizontal.

So: The **Smaller** the angle the **advanced** ischaemia.

→ **Fixed Colour** indicate → **Severe** ischaemia (Pre-gangrene).

2. Venous Filling Time :

- **Elevate** the limb till vein empty **then** allow dependency & Record time of filling veins.
- **Normally:** (5-10) sec.
- **IF**
 - **Mild** (10-30) sec.
 - **Moderate** (30-120) sec.
 - **Severe** (> 120) sec. i.e. > 2min. (pre-gangrene)

3. Trophic changes: (see before) If ulcer (Describe).

4. Gangrene: [Site, Type (dry or moist)] (See Q: 12)

5. Arterial: For Pulsating Aneurysm (in Femoral A). (See Q: 13)

6. Venous: → **Redness** If Thrombophlebitis i.e. (Burger's disease)

L 7. L.Ns : At Inguinal region **Why?** Because of Thrombophlebitis.

N 8. Movement: → **Lost** with Acute ischaemia. → **Weak** with Chronic ischaemia

* PALPATION

[Should be **Bilateral** starting with normal limb]

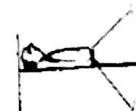
1. Temperature: **As usual** [Compare, healthy 1st, Dorsum of hand]

Before Examination of Temp: let the limb uncovered for **5 min** **Why?** (See Q: 14)

2. Capillary Circulation Test: [When we press on nail bed 2 sec]

- ✱ **Normally:** blanching then Rapid return to normal Colour.
- **IF delayed:** Ischaemia.
- **IF No Return** : Gangrene. (Even No black Colouration).

If The Nail is thick or deformed do pressure on pulp of fingers or any part of the skin



3. **Trophic changes:** (See before) If Ulcer (examine).

4. **Gangrene:**
 • Hard limb = Dry Gangrene, (using sterile gloves)
 • Soft Oedematous = Moist gangrene.
 Q: What about Gas Gangrene? (See Q: 15)

- A 5. **Arterial:**
 • [Examine All pulsation].
 • IF Aneurysm: Compressible mass with Expansile Pulsation & Systolic Thrill.

- V 6. **Venous:**
 • IF Oedema (pitting or not).
 • IF Thrombophlebitis i.e. (Burger's disease) i.e. Tender & Cord like

- L 7. **L.Ns**: At Inguinal region *Why?* Because of Thrombophlebitis.

- N 8. **Movement:** → Lost with Acute ischaemia.
 → Weak with Chronic ischaemia

★ **AUSCULTATION** Ⓞ Over Large vessels for Bruit if stenosis.

Ⓞ Over Aneurysm for Systolic Murmurs

Ⓞ Over A-V Fistula for Continous Murmurs.



IV. SPECIAL TEST

Ⓞ **Burger's Test**

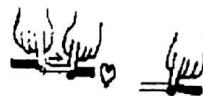
Ⓞ **Venous Filling Time**

Ⓞ **Capillary Circulation Test**

See before

Ⓞ **Harvey Sign**

- Put 2 index on a vein side to side then move, the nearer one to heart then release the other.
- If Rapid refilling → Normal.
- If Slow refilling → Ischaemia.



Ⓞ **Adson's Test**

- Palpate Radial pulse, ask pt, to turn his head & elevate his chin & takes deep inspiration.
- Palpate radial pulse again if (disappear).
- ↳ Cervical rib (thoracic outlet syndrome).



Ⓞ **Allen's Test:** The Patient makes a Tight fist 1st then occlude

① Radial Artery: Patient will relax his fist so observe flush. If delayed → ischaemia.

② Ulnar Artery: The same as Radial artery will be done.



HOW TO EXAMINE "ARTERIAL PULSATION"

A. Lower Limb

1. Dorsalis Pedis Artery Pulsation :

➤ **SITE** : Lateral to the Tendon of [Extensor Hallucis longus] on Dorsum of foot.

➤ **TECHNIQUE** : By Middle 3 finger tips then feel dorsum of foot (Not Ankle).

N.B.: Absent normally in (10 %).



2. Post. Tibial Artery Pulsation :

➤ **SITE** : Behind Medial Maleolus.

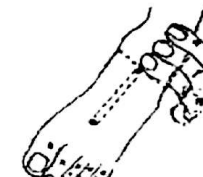
➤ **TECHNIQUE** : Curve your fingers behind & slightly below medial Maleolus then press genitally.



3. Ant. Tibial Artery Pulsation :

➤ **SITE** : Midway between both Maleolus.

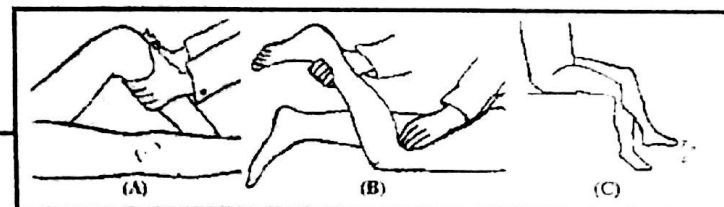
➤ **TECHNIQUE** : Felt Against lower part of Tibia just above the Ankle.



4. Popliteal Artery Pulsation :

➤ **SITE** : At Popliteal fossa.

➤ **TECHNIQUE** :



(A) **The lower Part of Popliteal Artery Pulsation :**

★ Flex the knee then Feel over the lower part of popliteal fossa & Press against the popliteal surface of the Tibia.

(B) **The upper Part of Popliteal Artery Pulsation :**

★ Turn the patient into prone position then flex the knee then feel it & Press against the popliteal surface of the Femur.

(C) **Crossed leg Test.**

5. Common Femoral Artery Pulsation :

➤ **SITE** : Below Midpoint of Inguinal Ligament

➤ **TECHNIQUE** :

Felt by pressing against head of femur.

B. Abdomen

6. External Iliac Artery Pulsation:

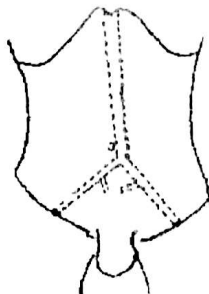
- Felt by pressing the lower 2/3 of a line drawn from just below umbilicus to mid point of Inguinal ligament.

7. Common Iliac Artery Pulsation :

- Felt by pressing the upper 1/3 of same line.

8. Abdominal Aorta Pulsation :

- Felt by pressing of both hands along Middle line (Above & Slightly to Left) from Umbilicus.



C. Upper Limb

9. Radial Artery Pulsation:

- Felt by pressing against the lower end of the Radius.

10. Ulnar Artery Pulsation:

- Felt by pressing against the lower end of the Ulna.

11. Brachial Artery Pulsation:

- Lower Half:

Felt by pressing along the medial border of Biceps Tendon.

- Upper Half:

Felt by pressing along the medial border of Biceps Muscle.



12. Axillary Artery Pulsation:

- Felt by placing thumbs on the Acromion & Turn the other fingers around the arm & press against Shaft of Humerus.

13. Subclavian Artery Pulsation:

- Felt by placing Middle 3 finger tips behind clavicle against 1st. Rib

D. Head & Neck

14. Common Carotid Artery Pulsation :

- Felt along the middle 1/3 of Ant. border of Sternomastoid muscle then Press Posteriorly to palpate against C6

15. Superficial Temporal Artery Pulsation :

- Press medially just in front of ear against the Zygomatic arch.



ORAL DISCUSSION

ISCHAEMIA

QUESTIONS ON INTRODUCTION

Q1: Why is gangrene of Acute Ischaemia being Moist Aseptic?

- ☆ Because of Sudden occlusion of artery → Reflex spasm of nearby vein. SO tissues will be loaded by blood & fluid. SO If gangrene occur → [Moist Aseptic gangrene]

N.B.: Moist septic gangrene caused by SBE.

Q2: Why sympathectomy is contra-indicated with ~~D~~ foot ?

- ☆ Because, patient is Auto-sympathetomized.

Q3: When amputation is indicated with ~~D~~ foot ?

- ☆ If Osteomyelitis is associated.

QUESTION ON SHEET

Q4: What is meant by Le Riche Syndrome ?

- ☆ Impotence due to Aorto-iliac occlusion with Both Int. Iliac block.

Q5: Why Rest pain occur at dorsum of foot more than sole ?

- ☆ Because, Dorsum of foot less vascular than sole.

Q6: Why rubbing of dorsum of foot ↓ Rest pain ?

- ☆ Because, rubbing at dorsum of foot → stimulation of proprioceptive fibers → ↓ pain [↓ Gait theory of pain]

Q7: What are the causes of False warm limb?

- Undercover.
- Under ttt by sympathectomy.
- Infection.
- D.M. "Auto-sympethactomized".

Q8: Which more dangerous Cyanosis or Redness Ischaemic limb?

- ☆ Redness more dangerous than cyanosis Because, Redness means Extravasation of blood from dead tissues.

Q9: What are causes of Gangrene ?

- 2ry to arterial obstruction (acute or chronic).
- Venous gangrene "Phlygmasia Cerula Dolans"
- Naturopathic gangrene "Leprosy".
- Infected: (I) gangrene & Gas gangrene).
- Traumatic: [Direct (bed sore) & Indirect (injury)]
- Physiochemical: [Burn & Frost bite].

Q10: What is the 1st muscle wasted in lower limb ?

- ☆ 1st muscle is Vastus Medialis.

Questions on Examination

Q11: Why flexion deformity can occur with chronic ischaemia ?

☆ Because, patient with rest pain holding his foot for many weeks.

Q12: What are the types of gangrene ?

- *Dry gangrene* : With Chronic ischaemia.
- *Moist gangrene*: With Acute ischaemia.
- *Gas gangrene*: With Infected wound.

Q13: Which more common popliteal or femoral aneurysm ?

☆ Popliteal Aneurysm more common.

Q14: Why we must uncover ischaemic limb before exam. of temp. ?

☆ To Avoid false warm ischaemic limb.

Q15: How can you diagnose Gas gangrene ?

- X-ray shows gases at site of covered wound.
- **Palpation** showing Tense & Crepitus affected limb..

Q16: What DD between Gangrene, Necrosis, Slough & Sequestrum ?

- ☆ **Gangrene**: Death of Macroscopic Tissues
- ☆ **Necrosis**: Death of Microscopic Tissues
- ☆ **Slough**: Separation of Necrotic Tissues
- ☆ **Sequestrum**: Death of Bone e.g Osteomyelitis

Questions on Special Test

Q17: What is meant by Disappearing Pulse?

☆ [Patients with early ischaemia] pulsation may be felt but disappear only with exercise due to shift of blood to muscle.

Q18: What is meant by 'Blue Toe Syndrome' ?

☆ In case of Aorto-iliac block → Send embolus to Big Toe early because of direct continuity.

Q19: What are the Clinical Test to detect level of Obstruction ?

- **Site** of Claudication.
- **Level** of Coldness.
- **Level** of Absent pulse.
- **Impotence** Leriche's syndrome

Q20: What are the clinical test to determine the degree of Ischaemia?

- **Degree of Pain**: → Rest pain or not.
→ Claudication Distance, Time & Rest time
- **Colour changes** → Normal Colour = Mild.
→ Postural changes = Moderate.
→ Fixed Colour = Severe.
- **Venous filling time** >120 sec = Severe.
- **Sloppish capillary** Severe.
- **Trophic changes** Severe.

Good luck

Varicose Veins Sheet



VARICOSE VEINS

Varicose Veins are Multiple, Dilated, Elongated, Tortuous, Soft, Bluish & Compressible veins of Superficial veins of lower limb.

* ANATOMICAL CONSIDERATIONS

Veins of Lower Limb

The lower limb is drained by the following venous systems.

I. Superficial system (Superficial to deep fascia). It includes ⇨

① Long Saphenous Vein:

It begins at the medial end of the dorsal venous arch of the foot and ascends in front of the medial malleolus to the medial aspect of the leg then behind the knee to the inner aspect of the thigh till the Saphenous opening (1.5 inch Below & Lateral to the pubic tubercle) where it arches to join the femoral vein.

* Tributaries of the Long Saphenous vein.

A. In the Thigh :

1. Superficial Circumflex Iliac Vein
2. Superficial Epigastric Vein.
3. Superficial Pudendal Vein.
4. Antero-lateral Vein.
5. Postero-medial Vein.

B. In the Leg :

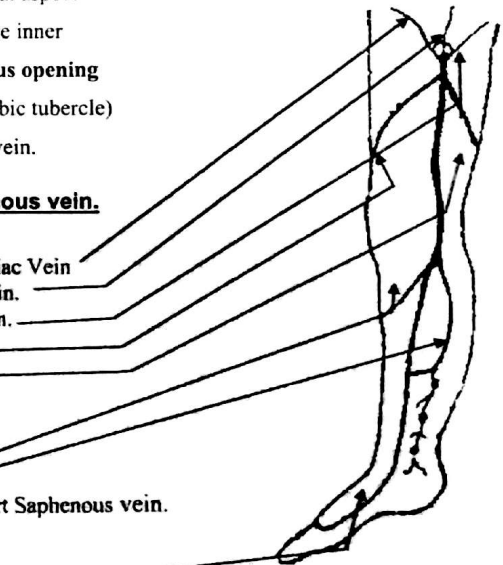
6. Anterior vein of the leg.
7. Posterior arch vein.
8. Tributaries from the Short Saphenous vein.

C. In the Foot:

9. The Dorsal venous arch.

② Lesser (Short) Saphenous vein:

It begins at the lateral end of the dorsal venous arch and ascends below & behind the lateral malleolus to run along the lateral edge of Tendo-achilles in the posterior midline of the leg to the middle of the popliteal fossa where it pierces the deep fascia to join the popliteal vein



II. Deep system

(Deep to the deep fascia) It includes

① Below the knee:

They consists of Venae Comitantes of the arteries + The venous sinuses inside the calf muscles (Soleus).

② The level of the knee:

They unite to form the popliteal vein which ascends to the thigh to become the femoral vein at the adductor canal the passes deep to the inguinal ligament to change its name into the external iliac vein.

III. The Connecting System

- These veins connect the superficial to deep veins (They have valves which allow a uni-directional blood flow from superficial to deep veins).

They either

① Direct Communicators = Perforators

Directly from superficial to deep veins.

SO THE PERFORATORS OF LONG SAPHEOUS

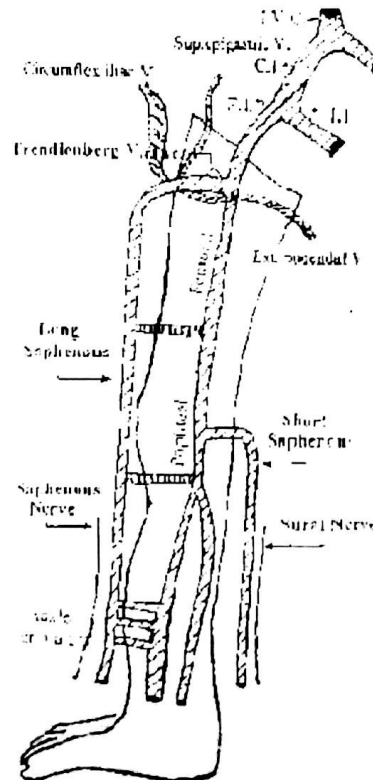
- 3 Ankle Perforators 2, 4 and 6 inches above medial malleolus they drain blood directly from the venous plexus of the skin to the deep system.
- 1 Perforator just below the knee.
- 1 Perforator at the Mid thigh.
- The Sapheno-femoral Junction.

SO THE PERFORATORS OF THE SHORT SAPHEOUS

- 1 lateral perforator 5 inches above the lateral malleolus.
- The Sapheno-popliteal Junction.

② Indirect Communicators

Veins passes from superficial vein to the muscles & another vein passes from the muscles to the deep veins.



Don't Forget

- All vein are containing valves except at Soleus muscle.
- Saphena Varix:
 - Saccular dilatation at Sapheno-femoral junction.
 - Saphena = صافى
 - Varix = Dilatation.
- Long Saphenous vein is the longest vein all over the body.
- Sapheno-femoral Junction = Trendelenberge valve.



* VENOUS PATHOPHYSIOLOGY

- Blood from the muscles of the leg returns to the deep veins.
- Blood from the skin and superficial tissues drains via the long and short Saphenous veins and then through the connecting system to the deep veins.

☆ On Walking and Exercise phase The Calf and Thigh muscles contracts within a tight fascial compartment (*Peripheral heart*) rises the pressure within these compartments to (200 - 300 mmHg) → Squeeze the deep veins up towards the heart.

☆ During the muscle Relaxation phase the pressure within the calf falls to a low level, and blood from the superficial veins flow through connecting system into the deep veins.

From These Facts:

The pressure drops in the superficial veins of the lower limb during walking or exercise and returns gradually to the pre-exercise level when walking stops.

With 1ry Varicose vein :

The Superficial system is Weak wall or absent valves or incompetent valves
→ High pressure (Heaviness pain) with standing only but walking or Exercise
→ Shift of blood from superficial to deep system. So the pain is decreased

SO

With 2ry Varicose vein :

The Superficial system is Normal but the deep system is occluded or compressed
→ High pressure (Bursting pain) not only with standing but also walking Exercise
→ So the pain is Increased

VARICOSE VEIN CASES

★ AETIOLOGY

1. 1ry VV = Non Obstructive due to

○ **Congenital weakness of venous wall.**

○ **Congenital Absence or Incompetent valves.**

• This is precipitated by: Prolonged standing or sitting as (Surgeons, Hair dressers,etc.)

• Due to Weak Mesenchyme:

Manifestation of Weak Mesenchyme:

- | | |
|-----------------|--------------|
| ① Kyphosis | ② Flat Foot. |
| ③ Visceroptosis | ④ Hernia. |
| ⑤ Varicocele | ⑥ Piles |



N.B: 1ry V. V is associated with Minimal Oedema & Skin complications.

2. 2ry VV= Obstructive due to

○ **DVT (Deep Venous Thrombosis)** due to

➢ 50% Post-operative (old age) → Fracture Neck Femur
→ Prostatectomy.

➢ Risk of D.V.T → Oral contraceptive pills. Because Oestrogen →
→ Fever after pelvic operation ↑ Coaguability of the blood.

○ **Deep Venous Compression** due to

➢ Pelvic or Abdominal Swellings

N.B : The Most common Swelling is Foetus

○ **Arterio-Venous Fistula** may be

➢ Congenital → If Child.
➢ Acquired → If Trauma (Bullet or Stab Wound in Femoral A).

N.B: 2ry V. V is associated with Marked Oedema & skin complications

★ COMPLICATIONS

① **Venous Complications**

- Hgc.
- Superficial Thrombophlebitis.
- Calcification.

② **Skin Complications:**

- Brownish pigment.
- Dermatitis.
- Ulcer.

I. VARICOSE VEIN SHEET

	1ry V.V.	2ry V.V.
★ PERSONAL HISTORY ☆ Name, Age, Sex ☆ Occupation. ☆ Marital status. ☆ Special habits	• (Commonly) Adult • Precipitated factors. • •	• (Commonly) Old and may be child (A V Fistula) • • Multiple Pregnancy. • Tight Corset.
★ COMPLAINT 1. Pain or 2. Oedema or 3. Skin complications	• At L.L (Commonly <u>Bilateral</u>) • Minimal • Minimal	• At LL (Commonly <u>Unilateral</u>) • Marked. • Marked
★ PRESENT HISTORY 1. Pain ➢ O.C.D. ➢ Severity ➢ Characters ➢ ↑ by ➢ ↓ by 2. Oedema 3. Skin complications	• O.C.D. • Mild • <u>Heaviness</u> pain ± <u>Burning</u> localized pain due to Superficial Thrombophlebitis. • ↑ with prolonged standing • ↓ by <u>Elevation</u> of the affected limb & by <u>Walking</u> • <u>Mild</u> & Appear at evening then resolute after sleep. • <u>Minimal</u>	• O.C.D. • Severe • <u>Bursting</u> pain due to D.V.T. • ↑ with prolonged standing or by <u>walking</u> • ↓ by <u>Elevation</u> of the affected limb only • <u>Marked</u> & persist not related to time. • <u>Marked</u> - Brownish pigment - Dermatitis. - Ulcer
4. <u>Associated swelling</u> 5. <u>Investigations & ttt</u>	• Groin : e.g (Saphena Varix) • Abdomen or pelvis -ve • Usually -ve	• Groin : e.g (L.Ns) • Abdomen or pelvis : <u>Mass</u> • Usually +ve
★ PAST HISTORY	• No History suggest DVT • DM & hypertension etc ...	• Factors suggest + DVT (See before) • Pelvic or abdominal mass e.g. compression on GIT • Trauma (A/V fistula) - Bullet - Stab wound • DM & hypertension etc ...
★ FAMILY HISTORY	Congenital Mesenchymal wall	

EXAMPLE OF

VARICOSE VAIN SHEET

★ PERSONAL HISTORY

محمد عمر محمد Male patient, 70 years old from غمرة, Seller (خضري), married since 30 years, has 5 children, the youngest is 10 years old. He is smoker, 30 cigarettes per day for 30 years with No other special habits of medical importance

★ COMPLAINT

Pain in both lower limbs (Lt Side since 10 years & Rt. side since 4 years).

★ PRESENT HISTORY

- The condition started with pain in Lt. lower leg 10 years ago with gradual onset and slowly progressive course. Heaviness in character, ↑ by Prolonged Standing & ↓ by Walking.
- The pain is associated with multiple, dilated, tortuous, bluish veins at the medial aspect of the Lt. leg. They progress upwards but not crossing the groin. The lower part of leg is brownish with itching.
- The pain is not associated with Ankle oedema or symptoms suggesting Thrombophlebitis in form of (fever, headache, Malaise and Anorexia) and (inguinal L.Ns).
- Then he complains of pain in the Rt. leg 4 years ago with same characters of Lt. one.
- The patient was advised to medical treatment as ointment and also advised to surgery but he refuse.
- It is associated with weak Mesenchyme in form of mass at Rt. groin showing Expansile impulse on cough, 2 years ago

★ PAST HISTORY

No past history about recurrence, No DM, No hypertension, No T.B, No Bilharziasts, No drug allergy, No previous operations as prostatectomy or fracture neck femur, No history of stab or bullet in femoral triangle.
(But there's Hernial operation on Lt Groin since 4 years)

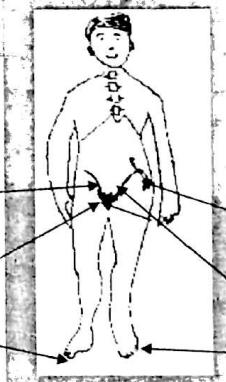
★ FAMILY HISTORY

Positive history of varicose vein in his father. Suggesting weak Mesenchyme

DIAGNOSIS

1ry Varicose Veins

II. GENERALEXAMINATION

	1ry V.V		2ry V.V
★ We look For →	<u>Manifestation of weak Mesenchyme</u> 1. Kyphosis 2. Visceroptosis 3. Hernia 4. Lt. Varicocele 5. Flat foot & Halux Valgus (See Q: 2)		1. <u>Vital signs</u> IF A/V Fistula - ↑ HR - Murmur 2. Organomegaly. 3. Dilated veins cross groin (See Q: 3) 4. Bilateral Varicocele if I.V.C. obstruction 5. Talipes Equinus as ulcer complications

III. LOCAL EXAMINATION

- Proper Position = Standing patient.
- Proper Exposure = from Umbilicus to Toes.
- Don't forget: • Examination of both limb.
• Examination of back as well as front & side

	1ry V.V.	2ry V.V.
★ <u>INSPECTION</u>	"Multiple, Bluish, Tortuous, Visible Swellings"	
1. <u>Side</u>	• Usually (<u>bilateral</u>)	• Usually (<u>Unilateral</u>) Except I.V.C. obstruction.
2. <u>Site</u>	• Along course of veins (long or short Saphenous or both). • V.V. Never cross the groin	• Along course of veins (long or short Saphenous or both). • V.V. cross the groin
3. <u>Shape</u>	• Tubular. • Saccular	• Serpentine. • Spider.
4. <u>Skin over</u>	• <u>Minimal</u> complications.	• <u>Marked</u> - Pigmentation - Ulcer (as sheet)
5. <u>Swollen limb</u> (oedema)	• <u>Minimal</u>	• <u>Marked</u>
6. <u>Skeletal deformity</u>	• Flat foot or Halux Valgus.	• Talipes equinus.
Look for (Inguinal Region)	• Saphena Varix. • Hernia	• L.Ns

★ PALPATION

A. المريض واقف: (7)

1. Palpate V.V. for Soft, Compressible.
2. Palpate V.V. for Tender nodule (along the course) for thrombosis.
3. Palpate V.V. for Tender cord (For superficial Thrombophlebitis).
4. **Direction of blood of dilated veins** across inguinal region (if 2ry V.V.)
5. Thrill if A.V. fistula.
6. Expansile impulse on cough at Sapheno-femoral junction.
7. **Saphena Varix:** (if 1ry V.V.)
Saccular compressible dilatation show Expansile impulse on cough at Sapheno-femoral junction

B. المريض نائم: (7)

1. **Skin:** For (ulcer) Describe
2. **S.C. tissue:** For (oedema) • 1ry → pitting.
• 2ry → non pitting
3. **Muscle:** For (Tone & Tender calf muscle) (See Q: 4)
➤ **Homan's Test** (not done) (See Q: 5)
4. **Bone:** For (Periosteitis of tibia)
5. **Vein:** If defect in deep fascia.
6. **Artery:** Arterial pulsation as dorsalis pedis artery.
7. **L.Ns:** Inguinal L.Ns.



★ PERCUSSION **Schwartz Percussion**

- The vein is Percussed by index of one hand & palpate distally by fingers of other hand.
- If 1ry V.V. the valves are incompetent so the wave is transmitted distally

★ AUSCULTATION

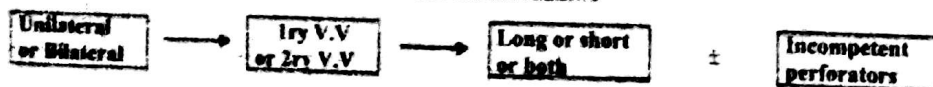
If A/V fistula → continuous Machinery murmur.

★ SPECIAL TEST See later

IV. INVESTIGATIONS

Doppler - Duplex **N.B.** (Arteriography if A/V fistula)

V. DIAGNOSIS



SPECIAL TEST

A. Test to detect (blow out) = Incompetent perforator.

① Trendelenberg Test

1. pt. lies down.
2. His leg raised.
3. Massage to empty veins.
4. Tourniquet just below Saphenous opening



5. Ask pt. to stand up
- **Result**
 - **Normal** slowly Filling from below
 - If rapid Filling → blow out
 - If we remove Tourniquet & Fill from above → Sapheno-femoral incompetent



② Multiple Tourniquet Test

1. pt. lies down
2. His leg raised
3. Massage to empty veins



4. Tourniquet
 - Just below Saphenous ring
 - Below Knee
 - Above Knee
5. Ask pt. to stand up
- **Result**
Rapid filling of a segment means that there is "blow out".



N.B:

1. For more localization do more Tourniquet in the segment
2. **Saphenous opening:**
→ 4 cm below & lateral to pubic tubercle

③ Manual localization Test "2 Fingers Test"

- Pt. stand and The two index are pressed at a point on Long Saphenous vein → then empty at opposite direction.
- **Result** → If vein fill between two fingers → blow out.



④ Fagan's test

- 1st Pt. stand & Then mark the varicosities.
- 2nd Pt. lies down & detect the defect of deep fascia (i.e. Blow out) then mark by (x)

B. Test to differentiate between occluded & patent deep vein

① Perthe's Test: depend on pain

- a. The patient lies on his back and the lower limb is elevated.
 - b. An Elastic bandage is applied firmly from the toes to the third of the thigh.
 - c. The patient is then asked to stand and walk in situ for 5 minutes.
- **Result** If the deep system is **occluded**, the patient will complain of pain in the leg.

② Modified Perthe's Test:

- a. The patient is standing.
- b. A tourniquet is applied just below Sapheno-femoral junction.
- c. The patient is asked to walk quickly in situ 5 minutes.

➤ **Result**

If the varicose veins disappear, this means that the deep system is patent.
If the veins become more engorged, this means that the deep system is occluded

VII. TREATMENT

1. Conservative Treatment

- * **INDICATIONS:** *Iry V.V* if early, Patient is pregnant, unfit, waiting for or Refusing operations.
- * **METHODS:**
 - ① Below knee Elastic stocking.
 - ② Periodic leg Elevation to prevent stasis.
 - ③ Avoid Prolonged standing + Regular Exercises.

2. Injection-compression Sclerotherapy

- * **AIM** To decompress by occlusion of lumen with fibrosis (Not thrombosis to avoid recanalization again).
- * **INDICATIONS:**
 - ① If Spider Varicosities
 - ② Residual after operations.
- * **CONTRAINDICATIONS**
 - ① 2ry V V with DVT
 - ② Pregnancy
 - ③ Acute Septic Thrombophlebitis.
- * **SCLEROSING MATERIALS:**
 - ① 3% Na Tetradecyle Sulphate.
 - ② 5% Ethanolamine Oleate.
 - ③ 5% Na Morrhuate.
- * **TECHNIQUE** Empty of segment of blood. Then isolated by 2 fingers. Then Firm elastic bandage is applied for 6 weeks.
- * **PRECAUTIONS:**
 - ① Small dose (1 ml).
 - ② One is done only then others at other visits.
 - ③ Walking & Exercises are advised



3. Operative Treatment

- * **INDICATIONS**
 - ① Saphena Varix.
 - ② Blow out.
 - ③ Repeated superficial Thrombophlebitis.
- * **OPERATIONS**
 1. **Trendlenburg's operation:**
 - * **INDICATED:** with Sapheno-Femoral incompetence i.e. Saphena Varix.
 - * **PRINCIPLE:** Ligation of long Saphenous & it's tributaries.
 2. **Subcutaneous stripping of long Saphenous:**
 - * **INDICATED:** if whole system is severely affected
 - * **PRINCIPLE:** Trendlenburg's operation then S.C stripping of whole long Saphenous vein.
 3. **Sub-fascial Triple Ligation of Incompetent perforators:**
 - * **INDICATED:** with Incompetent perforators.
 - * **PRINCIPLE:** ligature are applied on perforator & long Saphenous vein then Inverting "T" Segment is removed

ORAL DISCUSSION

VARICOSE VEIN

Questions on Varicose Vein

Q1: What are the value of PR & PV in V.V case?

- ⇒ *If 1ry V.V*: Piles may be detected.
- ⇒ *If 2ry V.V*: Pelvic mass may be detected.

Q2: What is meant by Flat Foot ?

- * **DEFINITION** Loss of med. arch of foot.
- * **AETIOLOGY**
 - Congenital "Weak Mesenchyme".
 - Paralytic "Paralysis of muscles act on foot".
 - Osteous "Dislocation of foot bones"
- * **COMPLICATIONS**
 - Joint Deformity.
 - Osteoarthritis & Pain.

Q3: What are the dilated veins crossing Groin region formed of ?

- Superficial Epigastric vein
- Lateral Thoracic vein to Axillary vein.

Q4: What are causes of Tender calf muscle ?

- DVT • Myositis. • $\emptyset$ Neuropathy.

Q5: Why 'Homan's Test' Not done ?

- ☆ To avoid dissemination of thrombi.

Q6: What is mean by 'Blow out' ?

- ☆ Blow out = Incompetent perforators.

Q7: What is meant by 'Ankle flare'?

- ☆ Fine venules passing around Medial Malleolus

Q8: What is meant by 'Branham's Bradycardia'?

- ☆ Occlusion of feeding vessels in case of A-V fistula will leads to slow of pulse to normal rate. N.B: It is *Relative Bradycardia*

Q9: Are any visible veins considered varicose vein ?

- ☆ No, Because varicose veins are Elongated & tortuous

Q10: What are different termed 'Trendlenberg' In surgery?

- Trendlenberg Valve: Sapheno-femoral junction.
- Trendlenberg Test: to detect Blow out or Saphena Varix.
- Trendlenberg Operations
 - ① To remove Saphena Varix.
 - ② Part of S.C stripping of long Saphenous
- Trendlenburg's Position For Barium x-ray e.g. detection of Hiatus hernia

Q11: What are the sites of perforators along the course of the short Saphenous vein?

- ★ There are two perforators above the lateral malleolus (lateral ankle perforators).
Another one is present handbreadth below the popliteal crease and there is also the Sapheno-popliteal junction.

Q12: Is there any veins crossing the shin of tibia?

- ★ Yes, there is a vein crossing the shin of tibia. It is liable to trauma leading to its rupture which may lead to severe Haemorrhage.

Questions on Venous Ulcer

Q13. What is Meant by 'Gaiter area' or Ulcer bearing area?

2,4,6 inches above medial malleolus.

Q14. What is the cause of Varicose Veins?

- ★ 1ry venous ulcer with in V. V [common & minimal]

Due to → Congenital weakness of venous wall.
→ Congenital absence or incompetence of valves.

- ★ 2ry venous ulcer with 2ry V. V [common & marked]

Due to → DVT (Deep Venous Thrombosis).
→ Deep venous compression.
→ A.V. Fistula.

Q15. What is The Pathogenesis of Venous ulcer?

(White Cell Trapping Theory) Venous Hypertension → S.C Capillary proliferation → ↑ W.B.Cs. The Trapped W.B.Cs becomes activated → ↑ Release of Proteolytic Enz. → Injury of capillary endothelium → Venous Ulcer

Q16. What are The causes of DVT?

- ★ 50 % post-operative [fracture neck femur & post prostatectomy]

Q17. What is The Most common site of DVT?

Calf muscle of lower limb.

Q18. What is The Most common presentation of DVT?

Tender Calf muscle.

Q19. What is Meant by 'Marjoline ulcer' ?

Malignant Venous ulcer.

Q20. What are the commonest causes of leg pain?

- | | |
|---------------|-------------------|
| A = Arterial | → Ischaemic pain. |
| V = Venous | → Varicose vein. |
| L = Lymphatic | → Tender L.N. |
| N = Nerve | → Sciatica. |
| Muscle | → Myopathy |
| Bone | → Osteomyelitis. |
| Joint | → Osteoarthritis. |
| Ligament | → Flat foot |

Good luck

Nerve Injury Sheet



Chapter 11

NERVE INJURY

ANATOMICAL CONSIDERATION

I. Muscles of the front of the forearm

A. Superficial muscles "5 Muscles"

- ① Pronator Teres. ←
- ② Flexor Carpi Radialis. ←
- ③ Palmaris Longus. ←
- ④ Flexor Digitorum Superficialis. ←
- ⑤ Flexor Carpi Ulnaris. ←

- **ORIGIN:** (C.F.O.) front of med. epicondyle of the humerus
- **ACTION:** Flexion of elbow & wrist joint
Except Pronator Teres (Pronation).
- **NERVE SUPPLY:** All muscles by median n. Except Flexor Carpi Ulnaris by Ulnar n.



B. Deep Muscles "3 Muscles"

- ① Flexor Pollicis Longus. (From Radials) ←
- ② Flexor Digitorum Profundus (From Ulna). ←
- ③ Pronator Quadratus (From both) ←

- **ACTION:** ① Flexor Pollicis longus
Flexion of wrist & thumb.
- ② Flexor Digitorum Profundus
Flexion of wrist & med. 4 fingers.
- ③ Pronator Quadratus (Pronation).
- **NERVE SUPPLY:** All muscles by i.e. (Median nerve) Except Med. 1/2 of flexor Digitorum Profundus by Ulnar nerve



Median n. supply all muscles of front of forearm **Except** 1.5 muscle supplied by Ulnar n. which is → Flexor Carpi Ulnaris
→ Med. 1/2 of Flexor Digitorum Profundus



II. Muscles of the Hand

(A) Thenar muscles + Adductor Pollicis muscle.

(B) Hypothenar muscles.

(C) Lumbricals & Interossei.

A. Thenar muscles

- ① Abductor Pollicis brevis.
- ② Flexor Pollicis brevis.
- ③ Opponens Pollicis.
- + Adductor Pollicis muscle

➤ **NERVE SUPPLY:** All these muscles supplied by median n.
Except Adductor Pollicis muscle by Ulnar n.

N.B: → Paralysis of Abductor Pollicis brevis = +ve Pen Touch Test.
→ Paralysis of Adductor Pollicis = +ve Froment Test.

B. Hypothenar muscles :

- ① Abductor Digiti Minimi.
- ② Flexor Digiti Minimi.
- ③ Opponens Digiti Minimi.

➤ **NERVE SUPPLY:** All these muscles by Ulnar n.

C. Lumbricals (4 muscles)

- **ORIGIN:** Tendon of Flexor Digitorum Profundus.
- **INSERTION:** Extensor Expansion of back of med, 4 fingers
i.e. back of Terminal Phalanges.

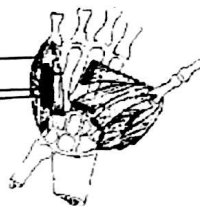
- **NERVE SUPPLY:** → Med. 2 fingers by Ulnar n.
→ Lat. 2 fingers by Median n.
- **ACTION:** → Writing position
→ Flexion of M/P & Extension of I/P joints.
- IF paralysed: → Extension of M/P & Flexion of I/P.
joint, i.e. Claw Hand.
→ If med. 2 Lumbricals only
→ partial (Ulnar) Claw Hand.

Interossei (7 muscles) [3 palmar & 4 dorsal]

- **ACTION:** → Palmar = [Adductor]
- Dorsal = [Abductor]

➤ **NERVE SUPPLY:** All by Ulnar n.

N.B If paralysed → loss of abduction & adduction
= +ve Card Test.



SO

➤ **Muscles of Hand** Supplied by.

1. Ulnar n → Hypothenar muscles.
→ Adductor Pollicis only.
→ Med. 2 Lumbricals & 7 Interossei
2. Median n → Thenar muscles
→ Lat. 2 Lumbricals.

Ulnar Nerve

Median Nerve

In The Arm

No branches

No branches

In The Forearm

☆ **Muscular branches:** (1.5 M)

- Flexor Carpi Ulnaris
- Med. 1/2 of flexor Digitorum Profundus.

☆ **Muscular branches:** (6.5 M)

- 4 muscles superficial.
- 2.5 muscles deep.

☆ **Cutaneous branches:**

[3 cm above wrist].

- Palmar Cutaneous branch → Palmar
Surface of (med. 1/3 of hand)

- Dorsal Cutaneous branch → Dorsal
Surface of (med. 1/3 of hand & Med. 1.5 fingers)

☆ **Cutaneous branches:**

[3 cm above wrist]

- Palmar & lateral cutaneous branches →
Skin over Thenar. Except lat. part which
by Radial n.

In The Palm

☆ **Muscular branches:**

- Adductor Pollicis.
- Abductor Digiti Minimi.
- Flexor Digiti Minimi
- Opponens Digiti Minimi
- 4 Dorsal Interossei.
- 3 Palmar Interossei
- Medial 2 Lumbricals.

☆ **Muscular branches:**

- Abductor Pollicis brevis.
- Flexor Pollicis brevis.
- Opponens Pollicis.
- Lateral 2 Lumbricals.

☆ **Cutaneous branches:**

- Palmar surface of medial 1.5 fingers.

Cutaneous branches:

- Palmar surface of lateral 3.5 fingers and
- Dorsal surface of upper part of lat. 3.5 fingers. But masked by Radial n.

I. NERVE INJURY SHEET

★ PERSONAL HISTORY

Name, Age, Sex, Occupation, Residence, Marital status
& Special habits e.g Alcohol → Neuritis

★ **COMPLAINT** The most common complaint is deformity
± sensory or motor or Trophic changes.

★ PRESENT HISTORY

- I. Analysis of complaint
- II. Analysis of **Part** affected
- III. Analysis of **Other parts** affected

I. Analysis of complaint

○ Deformity

1. O.C.D

2. PAINS

- ★ Site
- ★ Number (Rt or Lt).
- ★ Investigations & wt (done before)
- ★ Associated swelling: • L.Ns as in leprosy
 - Bony swelling as Callus.
 - Neuroma.

★ Pain " Analyzed as usual "

3. Trauma or not

○ If Post-traumatic [Ask about duration]

- Immediately = pressure by fracture = **1ry Neuritis**.
- Occurs after Hours or days = pressure by Haematoma = **2ry Neuritis**.
- Occurs after Months or year = pressure by callus = **Delayed Neuritis**.

II. Analysis of Part affected

The Peripheral nerves are mixed (Motor, Sensory & Autonomic)

1. Injury of **Motor** part • Deformity (Mal-position).
 - Paralysis (loss of function).
 - Wasting group of muscle
2. Injury of **Sensory** part • Loss of superficial sensation
 - Loss of deep sensation as (Sense of position & movement)
3. Injury of **Autonomic** part • Vasomotor Changes As → Redness of skin.
 - Sudomotor Changes As → Loss of sweating.
4. **Trophic** changes. [Loss of hair, brittle fissured nail and scaly dry skin]



III. Analysis of Other parts affected

★ F.H.M.A Inflammation at site of injury.

★ PAST HISTORY

- ★ Similar condition
- ★ Important disease → (produce peripheral Neuritis) as D.M, S, Leprosy.

★ FAMILY HISTORY

EXAMPLE OF

NERVE INJURY SHEET

★ PERSONAL HISTORY

اسيوط عرفه حسين محمد Male patient. 30 years old, نجار مسلح. Married since one year, born in اسيوط & live in منشية ناصر the patient does not smoke cigarettes, but he smokes Shisha. No other special habits of medical importance.

★ **COMPLAINT** Deformity of Rt. hand.

★ PRESENT HISTORY

- The condition started since 7 years with history of accident by a machine (associated wound in Rt. wrist).
- The patient was admitted to hospital العباسية, the wound was sutured with slab (جبيرة) 15 days then advised to physiotherapy with little improvement so the patient was advised to make another nerve repair after 9 months.
- At this time patient complains deformity of Rt. hand. After 9 months, the surgical trial was done in hospital قصر العيني the deformity Still present
- There are associated **Motor** affection: As Deformity, loss of function of medical 1.5 finger and associated wasting.
- There are associated **Sensory** affection: As impaired sensation.
- There are associated **Autonomic** affection: As loss of sweating but little.
- There are associated **Trophic** changes: As dry skin, loss of his but minimal.
- No associated inflammation or associated L.Ns.

★ PAST HISTORY

No past history about recurrence, No DM, No hypertension, No T B, No Bilharziasis, No drug allergy, No other previous operations.

★ FAMILY HISTORY

No family history of similar condition (Irrelevant)

DIAGNOSIS

Rt. Ulnar Nerve Injury

II. GENERAL EXAMINATION

As Usual but look for evidence for cause of Peripheral Neuritis
 e.g. Face : Skin Nodules → leprosy.
Lower Limb : stocking sensory loss with D.M.

III. LOCAL EXAMINATION

1. ULNAR NERVE INJURY

A. Ulnar n. injury at Wrist joint

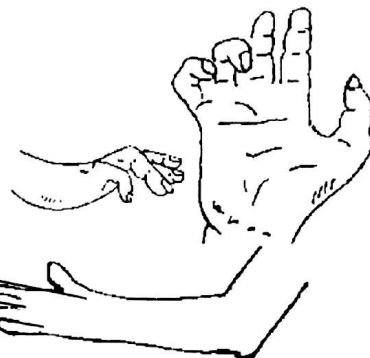
* INSPECTION

① Deformity: (Partial) Ulnar Claw Hand

Why ? due to paralysis of med. 2 Lumbricals.

② Wasting: of

- Adductor Pollicis
- Interosseous space
- Hypothenar eminence.
 - Abductor Digiti Minimi.
 - Flexor Digiti Minimi.
 - Opponens Digiti Minimi.



③ Vasomotor or Sudomotor changes:

i.e. Redness or Anhydrosis is minimal (i.e. Autonomic affection).

④ Trophic skin changes:

i.e. Loss of hair, brittle nail etc..... is minimal

⑤ Scar

- Site (At wrist joint).
- Length & direction.
- Associated Neuroma or not.
- Healed by 1ry Intension or 2ry Intension.
- Adherent to deep structure or not. By asking pt, to contract underlying muscle if pulled → It is attached to deep structure.

⑥ Movement: [Active] i.e. Against Resistant.

- Inability to move Abductors or Adductors of the Med. 4 fingers.

e.g. Examine Motor power of 1st dorsal Interosseous. →

- Inability to move Adductor Pollicis muscle

- Inability to move Abductor Digiti Minimi
 e.g. Examine motor power of this muscle. →



* PALPATION

- ① Deformity.
- ② Wasting.
- ③ Vasomotor or Sudomotor Changes
- ④ Trophic Changes.
- ⑤ Scar
- ⑥ Movement: (Passive) Not active to exclude other causes of this deformity e.g. stiffness of joint.

Confirm

⑦ Skin Sensation →

- Examine from Anesthetic area to normal area and not the reverse.

➤ Examine Superficial Sensation 1st:

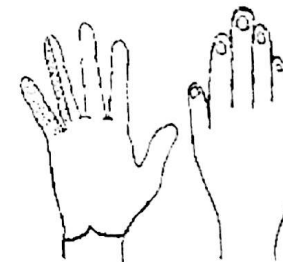
1. Touch : By Cotton Wool.
2. Pain : Sharp Pin.
3. Temp : By 2 Test Tube (Hot & Cold).

➤ Examine Deep Sensation

By sense of position & sense of movement.

➤ The Result:

Loss of sensation at palmar surface of med 1.5 finger only



* PERCUSSION Tinel's Sign

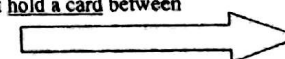
Tap the nerve below the lesion if distal tingling is felt by patient this means the nerve fiber growing distally.

N.B. Notes this site for follow up.

* SPECIAL TEST

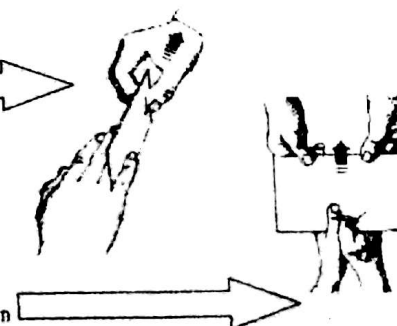
I. Card Test

- ☆ Due to paralysis of Interossei (which adduct the fingers) the pt. can't hold a card between his extended fingers.



II. Froment Test

- ☆ Due to paralysis of Adductor Pollicis, if the pt, asked to grasp a paper between his thumb & sides of index fingers → The Terminal phalanx of the affected thumb is flexed to hold the paper (by the Flexor Pollicis Longus which supplied by median n



B. Ulnar n. injury at Elbow joint All of the above +

But : ① **Deformity** : Decreased why?

- Because of extension of distal I/P joint because of paralysed medial 1/2 of Flexor Digitorum Profundus. i.e. **Ulnar paradox**

- Also there is **Radial deviation** because of paralysed Flexor Carpi Ulnaris

② **Wasting** : at medial side of ulna

because wasting of Flexor Carpi Ulnaris & medial 1/2 of Flexor Digitorum Profundus.

③ **Vasomotor or Sudomotor changes** : **Marked** (more mixed)

④ **Trophic changes** : **Marked**.

⑤ **Scar** → At Elbow mainly

⑥ **Movement** → [Active]

It is associated by weak flexion of wrist so it will be examined by adduction of wrist against resistance.

Also **Sensation**

- Lost at palmar & dorsal surface of medial Aspect of the hand
- Lost at palmar & dorsal surface of medial 1.5 fingers

SO The End result

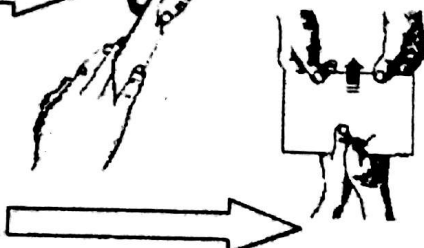
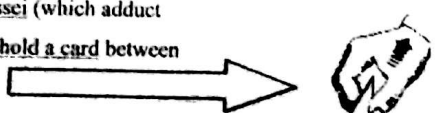
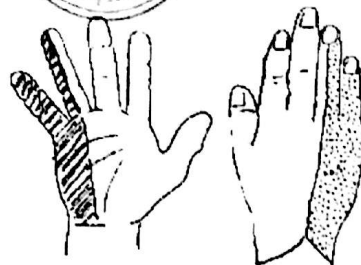
[SPECIAL TEST]

I. Card Test

- ★ Due to paralysis of Interossei (which adduct the fingers) the pt. can't hold a card between his extended fingers.

II. Froment Test

- ★ Due to paralysis of Adductor Pollicis, if the pt. asked to grasp a paper between his thumb & sides of index fingers → The Terminal phalanx of the affected thumb is flexed to hold the paper (by the Flexor Pollicis Longus which supplied by median n



2. MEDIAN NERVE INJURY

A. Median n. injury at Wrist joint

★ **INSPECTION**

① **Deformity** : [**Ape Hand**]

Why? due to paralysis of Abductor Pollicis brevis and contraction of Adductor Pollicis (which supplied by Ulnar n.)

② **Wasting** : of The Thenar eminence

- Abductor Pollicis brevis.
- Flexor Pollicis brevis.
- Opponens Pollicis.

③ **Vasomotor or Sudomotor changes** : **minimal**

④ **Trophic skin changes** : **minimal**

⑤ **Scar** → "At wrist" then Analyzed as usual

⑥ **Movement** : [Active] i.e. Against Resistant.

Examine Thenar Muscles

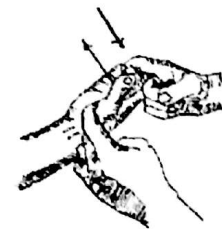
- ① Test for Flexor Pollicis brevis
Ask the pt. to flex his Thumb against resistance
- ② Test for Opponens Pollicis
i.e. loss of thumb opposition to little & other fingers
- ③ Test for Abductor Pollicis brevis.

A. **Pen Touching Test**

The Thumb can't be abducted to touch a pen in front of it with back of hand on table to avoid action of flexors.

B. **Wartenberg's Test [Prayer's position Test]**

The Tip of the thumb of the affected side touching the palmar aspect of the pulp of the non affected thumb.



★ **PALPATION**

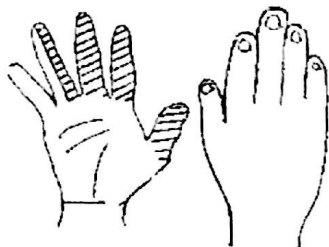
- ① Deformity.
- ② Wasting.
- ③ Vasomotor or Sudomotor changes
- ④ Trophic changes.
- ⑤ Scar

Confirm

- ⑥ **Movement: (Passive)** Not active to exclude other causes of this deformity e.g. stiffness of joint.

⑦ **Skin Sensation**

- **Examine** from Anesthetic area to normal area and not the reverse.
- **Examine Superficial Sensation 1st:**
 1. Touch : By Cotton Wool.
 2. Pain : Sharp Pin.
 3. Temp : By 2 Test Tube (Hot & Cold).
- **Examine Deep Sensation**
By sense of position & movement.
- **The Result:**
Loss of sensation at palmar surface of lat 3.5 finger only



N.B: No affection on dorsum because It is supplied by Radial n.

★ **PERCUSSION Tinel's Sign**

Tap the nerve below the lesion if distal tingling is felt by patient this means the nerve fiber growing distally.

N.B. Notes this site for follow up.

B. Median n. injury Above Cubital fossa

All of The above + **But** :

- ① **Deformity** : The same but there is Ulnar deviation because of paralysis of Flexor Carpi Radialis. →
- ② **Wasting** : of Flexor surface of forearm because of wasting of their muscles
- ③ **Vasomotor or Sudomotor changes** : Marked
- ④ **Trophic changes** : Marked.
- ⑤ **Scar** → Above Cubital fossa, Arm or at Axilla.

⑥ **Movement** → [Active]**A. Test of motor power of Pronator Teres & Quadratus Muscles** →

- ☆ Pronation of Supinated forearm but don't forget the arm must be adducted and forearm flexed why ? to avoid Internal rotation of shoulder Joint.

**B. Test of motor power of Flexor Carpi Radialis.**

- ☆ Examine Radial deviation against resistance but don't Forget the wrist must be flexed why ? to avoid the action of Extensor Carpi Radialis

**C. Test of motor power of Flexor Digitorum Superficialis** →

- ☆ Flexion of middle phalanx of med, 4 fingers.
"Test one finger while fixing the other 3 fingers"

D. Test of motor power of Lat 1/2 of Flexor Digitorum Profundus. →

- ☆ Flexion of terminal phalanx of Index and middle fingers.
While supporting their middle Phalanges. Why?
To avoid the action of Flexor Digitorum Superficialis

**E. Test of motor power of Flexor Pollicis Longus**

- ☆ Flexion of terminal phalanx while fixing proximal phalanges
why ? to avoid action of "Flexor Pollicis brevis".

Also Sensation As cutting at wrist But.

- Lost at lateral 2/3 of the palm of the hand only.

N.B. The lat, part of Thenar not affected why ?
because supplied by Radial n.

**[SPECIAL TEST]****Ochner's Clasping Test** →

- ① The Index on the affected side is Pointed, Extended and Tapered if the pt. is asked to clasp his hands together.
- ② Due to loss of action of lat 1/2 of Flexor Digitorum Profundus & lat 2 Lumbricals.



3. RADIAL NERVE INJURY

ANATOMY

☆ Axilla: → **Motor**: Long head of Triceps.

→ **Sensory**: Post. cut. n. of arm.

☆ Spiral Groove → **Motor** • Med. & Lat. head of Triceps.
→ **Sensory** • Post. cut. n. of forearm.

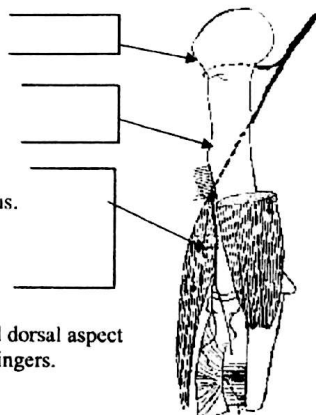
☆ Above Elbow: → **Motor** • Brachioradialis.
• Extensor Carpi Radialis longus.
• Lat 1/2 of brachialis.
• 2 Terminal branches:

(1) Superficial Cutaneous branch (Sensory)

➤ Supply lat. 2/3 of dorsum of hand and dorsal aspect of proximal phalanx of Lat. 2/3 of fingers.

(2) Posterior Intrososseous n. (Motor)

➤ Supply all Extensors of forearm



Extensors of Forearm. (12 muscles)

I. Superficial group: (7 muscles)

➤ NERVE SUPPLY: Post. Intrososseous n. except Anconeus
Brachioradialis and E.C.R. longus by Radial n.

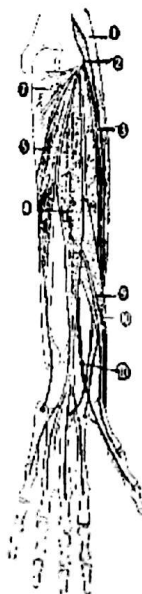
➤ COMMON ACTION: Extension of elbow & wrist, Except Brachioradialis.

1. Brachioradialis. → Flexion of elbow in mid prone position.
2. E.C.R. Longus → Common Action + Abduction.
3. E.C.R. Brevis → Common Action + Abduction.
4. Extensor Digitorum → Common Action + Extension of M/P of med. 4 fingers
5. Extensor Digniti Minimi → Extension of M/P of little finger.
6. Extensor Carpi Ulnaris → Common action + Adduction.
7. Anconeus → Common action Except extension of wrist.

II. Deep group: (5 muscles)

➤ NERVE SUPPLY: All by post. Intrososseous n.

8. Supinator: Supination of Extended Pronated forearm.
9. Abductor Pollicis longus → Abduction of adducted thumb.
10. Extensor Pollicis brevis → Extension of proximal phalanx of thumb.
11. Extensor Pollicis longus → Extension of All joints of thumb.
12. Extensor Indices → Extension of proximal phalanx of index



EXAMINATION DEPENDING ON SITE OF INJURY

I. Injun At Head Of Radius: (i.e. Post Intrososseous n. injury)

➤ **MOTOR**: Paralysis of all extensors of wrist & fingers So [Finger drops deformity]

Why No Wrist drop? because there is weak extension of wrist by

Brachioradialis and Extensor Carpi Radialis Longus (i.e. Radial n.)

➤ **SENSORY**: No Changes Why?

Because post. Intrososseous n. (Purely motor).

II. Injury At Lower 1/3 Of Arm: (i.e. Above Elbow).

➤ **MOTOR**: As above (+) [Wrist Drop Deformity].

➤ **SENSORY**: Loss of small area on dorsum of thumb.

III. Injury At Spiral Groove:

➤ **MOTOR**: As above (+) [Weak Extension of Elbow]

➤ **SENSORY**: Anaesthesia over lower lat. arm and back of forearm.

IV. Injury At Axilla:

➤ **MOTOR**: as above + [Complete loss of Extension of Elbow].



• motor power of supinator



• motor power of Extensors of wrist and fingers



• motor power of triceps



• motor power of brachioradialis.

ORAL
DISCUSSION

NERVE INJURY

Q1: What are the causes of Wrist & Foot drop?

- ☆ Wrist drop by Radial n. injury.
- ☆ Foot drop by Sciatic n. injury.

Q2: How can you by One Test only D.D. Ulnar, Radial from Median n. injuries?

- Ulnar injury by: Froment Test.
- Median injury by: Clasp Test.
- Radial nerve by: Fingers ± wrist drops.

Q3: How can you by movement of thumb only know the nerve which injured

- ☆ If the Thumb Fail to do → Flexion, Abduction & Opposition → Median n. injury.
- Adduction → Ulnar n. injury
- Extension → Radial n. injury.

Q4: What is the sensation of Ring finger?

- * Ventrally: Medial aspect: Ulnar n.
- Lateral aspect: Median n.
- * Dorsally: Medial aspect: Ulnar n.
- Lateral aspect: Radial n. except upper part by median n.

Q5: What is meant by Ulnar paradox ?

- ⊙ Injury of Ulnar n. at elbow less marked deformity than if occurs at wrist

Q6: What are the causes of Claw Hand ?

It may be → Partial Claw Hand : Ulnar n. injury.

→ Complete Claw Hand :
may be →

1. Combined Median Ulnar injury.
2. Medial cord lesion.
3. Advanced Rheumatoid arthritis.
4. Volkman's Ischaemic contracture.

**Q7: How can you D.D Volkman's ischaemic contracture from Ulnar n. injury ?**

- ⊙ By signs present only with Volkman's ischaemic contracture.

- ① Absent Radial pulsation.
- ② Flexion of wrist → Extension of fingers

Q8: What are the types of nerve injuries ?

- Neuroapraxia: Temporary loss of nerve function with No changes in nerve axons or sheaths so "**Best prognosis**"
- Axonotmesis: It is due to interruption of the axon with Intact Neurolemmal sheaths so. "**Good prognosis**"
- Neurotmesis: It is due to Interruption of both axon & Neurolemmal sheaths so "**Bad prognosis**"

Q9: What are the investigations needed for patient with nerve injury ?

- A. Nerve Conduction Test → Neuroapraxia conduct electrical impulse.
→ Axonotmesis & Neurotmesis can't conduct it.

B. Quinizarine Powder Test. "To detect Anhydrosis"

Put the white powder at skin affected then observe the change of it's Colour if remain means Anhydrosis if changed to be pink = sweating.

Q10: What is the ttt of cases having n. injury?

- Early : Conservative ttt i.e. physiotherapy.
- Late : >2 months with No Response to conservative ttt occur.
 1. Nerve suturing.
 2. Nerve grafting.

Q11: What are the evidence of nerve regeneration?

1. 1" to recover is (Crude) touch sensation then motor power from proximal to distal.
2. Tinel's sign +ve.

Q12: What are the factors affecting the prognosis of injured nerve ?

1. Neuroapraxia : Is the best prognosis.
2. Motor or sensory nerve : better prognosis than mixed nerves.
3. Nerve supply Bulky Muscle: better prognosis than which supply fine muscles.
4. Good Apposition of the cut ends of the nerve.
5. Asepsis: Sepsis interfere with nerve generation

Good luck

Lymphadenopathy Sheet



Chapter 12

LYMPHADENOPATHY

Introduction

★ Generalized Lymphadenopathy

★ Start as one group then becomes generalized:

1. T.B. (2ry) Rare
(Night sweat & Night fever + loss of weight & Loss of appetite)
2. Lymphoma (Hodgkin & Non Hodgkin)
(multiple swelling at anatomical site of L.Ns)

★ Start generalized from the start:

3. Leukaemia
[Bone ache + Bleeding tendency from orifices]

4. 2ry syphilis
[Skin rashes + Genital ulcer]

caused by Epstein Barr virus

5. Infectious Mononucleosis (IMN)
[Skin rashes + Glandular fever]

6. AIDS

Q: What are the causes of L.Ns with Skin rashes?

- Mouth
- Bleeding gums
- Haemoptysis
- Haematemesis
- Nose
- Epistaxis
- Rectum
- Bleeding
- Bladder
- Haematuria
- Vaginal
- Menorrhagia

★ Localized Lymphadenopathy

1. T.B. (1ry) → No Toxaemia [Not tender].
[Young + bad hygiene + Cold abscess.]
2. Acute lymphadenitis [Tender].
[1ry septic or malignant focus (e.g. ulcer or swelling) or septic trauma] at draining are]

Don't forget

	1ry TB (common)	2ry TB (Rare)
Route	• Lymph borne	• Blood borne
Clinical picture	• Localized Lymphadenopathy (Upper Deep Cervical L.Ns) • No Toxaemia. • L.Ns: - Painless, enlarged. - (Firm, Cystic, Hard) - Matted or Rosary beads. - "Can be counted"	• Generalized Lymphadenopathy (Lymphadenoid.) • Toxaemia. • L.Ns: - Painless, enlarged. - Firm. - Discrete and mobile
Complications	• Cold Abscess. • TB Sinus (Described) • Calcification.	

Acute lymphadenitis

Tender & Enlarged
Firm
Single

Non Hodgkin

Painless & Enlarged
(Firm, Soft, Hard)
Amalgamated
"can't be counted"
Infiltration
(bad prognosis)

Hodgkin (Lymphadenoma)

Painless & Enlarged
Firm
Discrete & mobile
No Infiltration
but pressure symptoms.

Don't Forget

- ⇒ **Lymphadenoid** = 2ry T.B
- ⇒ **Lymphadenoma** = Hodgkin's disease
- ⇒ **Adenolymphoma** = Monomorphic adenoma of salivary gland

I. LYMPHADENOPATHY SHEET*** PERSONAL HISTORY**

1. Name
2. Age
 - If Young → T.B.
 - If Adult → Acute Leukaemia or **Hodgkin** (10-30 years).
 - If Old → Chronic Leukaemia or **Non Hodgkin** (30-70 years)
3. Sex → Malignancy more common in male.
4. Residence: T.B (Low socioeconomic standard area)
5. Occupation: Brucellosis (in those contact with animal)
Because: Brucellosis → Pel Epstein fever → **Hodgkin's disease**.
6. Marital status
7. Special habits of medical importance (Alcohol). Why?
Because alcohol induce pain at site of **Hodgkin's disease**.

*** COMPLAINT *** Multiple Swellings (At anatomical site of L.Ns) ± pain.

*** PRESENT HISTORY**

- I. Analysis of complaint (swelling ± pain)
- II. Analysis of symptoms related to Part affected
- III. Analysis of symptoms related to Other parts affected

I. Analysis of complaint (Swelling + Pain)

1. O.C.D. (Onset - Course - Duration)

2. PAINS

- ☆ Site & Side (If localized)
- ☆ Number (If multiple ask about 1st group).
- ☆ Investigations & tit (Ask about Biopsy)
- ☆ Associated swelling (L.Ns) If generalized.
- ☆ Pain "If present"

Q: What are the causes of painful L.Ns?

- Acute lymphadenitis.
- Late lymphoma

1. O.C.D.
2. Site
3. Extent
4. Characters
5. ↑ by (e.g. Alcohol)
6. ↓ by
7. Associated symptoms

II. Analysis of symptoms related to Part affected

i.e. Pressure (Infiltrations) Symptoms = **Local complications**

⊗ In Neck Lymphadenopathy

- Dyspnea (trachea or larynx).
- Dysphagia (oesophagus).
- Horner's syndrome (sympathetic chain).
- A Fainting attacks (carotid artery compression)
- V Face oedema (Int. Jugular vein compression)
- N Hoarseness (recurrent laryngeal nerve).

⊗ In Abdominal Lymphadenopathy

- Abdominal pain or back pain.
- Jaundice (L.Ns in Porta-hepatis).
- Leg oedema (compressed iliac veins or I.V.C by iliac & Para-aortic lymph nodes).
- Renal pain (Ureteric compression)

⊗ In Chest Lymphadenopathy

- Chest pain, cough and dyspnea.

⊗ Axillary Lymphadenopathy

- Oedema of affected limbs (Vein compression).
- Ischaemia or gangrene (Arterial compression).
- Tingling, numbness... (Nerve compression)

⊗ Inguinal Lymphadenopathy

- Same as axillary but ask about:
A → Claudication pain on walking.
V → V.V. of L.L.

III. Analysis of Symptoms related to Other parts affected**① Toxic Manifestations (FHMA)**

- [1] Hectic fever : As in acute lymphadenitis (Abscess).
- [2] Night fever : As in T.B. (2ry).
- [3] Glandular fever : [Fever + Rash] as in I.M.N.
- [4] Pel. Epstein fever = Irregular = periodic → As in (**Hodgkin**).

② Aetiological Manifestations (See Introduction)**A. Generalized Lymphadenopathy :**

1. T.B. (2ry).
 2. Lymphoma.
 3. Leukaemia.
 4. 2ry syphilis.
 5. I.M.N.
 6. AIDS.
- (Start as one group then becomes generalized).
- (Start generalized from the start).

B. Localized Lymphadenopathy :

1. T.B. (1ry).
2. Acute lymphadenitis.

*** PAST HISTORY**

- Similar condition i.e. Recurrency
- Important disease as D.M., hypertension, heart diseases etc
- Previous operation or biopsy (which L.Ns)
The Moderate size because {Not big (degenerated) & Not small (No pathology)}
- Previous exposure to irradiation)

*** FAMILY HISTORY**

- T.B. may affect members (Same Environment)

EXAMPLE OF

LYMPHADENOPATHY SHEET*** PERSONAL HISTORY**

محمد عمر محمد Male patient, 70 years old, from غمرة seller (خضري) married since 30 years and has 5 children, the youngest 10 years old. He smokes 30 cigarettes per day for 30 years with No other special habits of medical importance.

*** COMPLAINT**

Multiple bilateral swellings in the neck, Axilla and Groin 2 years ago

*** PRESENT HISTORY**

- The condition is started by multiple, bilateral, painless swellings in the upper part of the neck 2 years ago by gradual onset and slowly progressive course.
- The condition was associated with night sweat, night fever, loss of weight and loss of Appetite.
- 2 days later multiple, bilateral swellings appears in both Axilla.
- 7 days later multiple, bilateral swelling appears in both Groin.
- The patient was admitted to (حميات العباسية) for 7 days and investigated by urine, stool, CBC and chest x-ray. Then received medical treatment and fever disappear.
- The patient is still complain by dyspnea and cough. So admitted to (مستشفى الصدر) and received medical treatment. The symptoms disappeared but the swellings persist. So admitted also to (معهذ الأورام) and received medical treatment in form of (4 types of drugs) so swelling ↓ in size and persist until now.
- **No Symptoms suggesting pressure in Axilla** : inform of oedema, tingling, numbness or Claudication pain.
- **No Symptoms suggesting pressure in Groin** : Same as Axilla.
- **No Symptoms suggesting pressure inside Abdomen** : Inform of renal pain, jaundice or leg oedema.
- **No Symptoms suggesting causes as** : Leukaemia (bleeding tendency), 2ry syphilis (Skin rashes with genital ulcer or IMN (skin rashes and glandular fever). [There are bilateral varicose vein and Rt. side Hernia].

*** PAST HISTORY**

No past history about recurrence, No DM, No hypertension, No T.B, No Bilharziasis, there past history about Lt. side Hemial operation

*** FAMILY HISTORY**

No family history of similar condition (Irrelevant)

DIAGNOSIS

Generalized Lymphadenopathy most probably **2ry T.B**

EXAMPLE OF

LYMPHADENOPATHY SHEET*** PERSONAL HISTORY**

محمود إبراهيم الدسوقي Male patient, 23 years old, he is from الشرقية and living now in المطرية he is ميكانيكي, he is single, he smokes 10 cigarettes per day for 4 years with No other special habits of medical importance.

*** COMPLAINT**

Multiple bilateral swellings in the Neck, Axilla and Groin 6 years ago

*** PRESENT HISTORY**

- The condition is started by multiple, bilateral, painless swellings in the upper part of the neck 6 years ago by gradual onset and slowly progressive course.
- At 1st appears in the Neck then Axilla and finally groin 1 week from the onset.
- The condition is associated by fever 1 week and disappeared 10 days then returned in same manner.
- The patient was admitted to (الدمرداش) hospital and was investigated by C.B.C, CT chest, Bone marrow aspiration from sternum and L.Ns biopsy from Axilla. Then received medical treatment in form of chemotherapy So the patient's hair lost as complication.
- **No symptoms suggesting pressure in Axilla** : In form of oedema, tingling, numbness or Claudication pain.
- **No symptoms suggesting pressure in Groin** : Same as Axilla
- **No symptoms suggesting pressure inside Abdomen** : In form of renal pain, jaundice or leg oedema.
- **No symptoms suggesting causes as** : Leukaemia (bleeding tendency), 2ry syphilis (Skin rashes with genital ulcer or IMN (skin rashes and glandular fever)

*** PAST HISTORY**

No past history about recurrence, No DM, No hypertension, No Bilharziasis

*** FAMILY HISTORY**

No family history of similar condition (Irrelevant)

DIAGNOSIS

Generalized Lymphadenopathy most probably **Hodgkin's lymphoma**

II. GENERAL EXAMINATION

A. **VITAL SIGNS** For normal "See Page 2"

[Temp, Pulse rate, A.B.P., R.R.]

B. **GENERAL EXAMINATION** (A.B.C.D.E.F) "See Page 2"

- A = **Appearance** → Ill with Cachexia as in late Lymphoma
 B = **Built** → Under built as in T.B and Lymphoma.
 F = **Face** → Toxic face as in Acute Lymphadenitis.

C. SYSTEMIC EXAMINATION

AIM: Examine all accessible L.Ns except the presenting group + detection of the cause.

I. **HEAD:** ① **Skull:** for Bone metastasis:

- ② **Eye:** for Jaundice (If L.Ns in Porta-hepatis).
 ③ **Lip:** for Pallor and Cyanosis (If L.Ns in mediastinum).
 ④ **Tongue:** Paralysis (If infiltration of hypoglossal nerve).
 ⑤ **Parotid Region** for swelling → Mikulicz. (Auto-immune)

II. **NECK:** ① **Thyroid gland:** for enlargement

- ② **Trachea:** Central or not.
 A ③ **Carotid pulsation:** (i.e. cervical L.Ns).
 V ④ **Congested neck veins:** (i.e. Mediastinal L.Ns)
 L ⑤ **Other L.Ns:** If not the presenting group.

Iry Toxic goitre
(Auto-immune)
Hashimoto's Thyroiditis
(Auto-immune)
Occult Carcinoma

III. **UPPER & LOWER LIMB:** For V → Venous oedema

- A → Arterial pulsation
 N → Nervous sensation
 L → Other L.Ns if not the presenting group

IV. **CHEST:** ① **Bone** (Chest wall) Metastasis.

- ② **Lung** (Consolidation) as in T.B.
 ③ **Sternum** (Tenderness) as in Leukaemia.
 ④ **Scapine's Sign** (Mediastinal L.Ns) = Bronchial breathing is Auscultated below level of T4 on **BACK**



V. **ABDOMEN:** ① **H.S.M.** as in Leukaemia.

- ② **Abdominal organs** as in spleen.
 ③ **L.Ns** if not the presenting group.

VI. **PELVIS:** ① **Testis:** If testicular tumors

N.B.: *Seminoma one of occult carcinoma*

② **PR or PV** = For pelvic tumors or nodule in the Douglas pouch.

VII. **DON'T FORGET (BACK):** For Metastasis

III. LOCAL EXAMINATION

* INSPECTION N S E D

N — ☆ **Number** (Single or multiple)
 [i.e. localized or generalized].

8 S — ☆ **Site** (Anatomical site of L.Ns)

- T.B → Upper D.C.L.Ns.
- Hodgkin → Lower D.C.L.Ns.
- 2ry S → Epitrochlear L.Ns.
- IMN → Occipital L.Ns.

☆ **Side** → Rt or Lt or both

☆ **Shape** → (Oval, Rounded or Irregular)

☆ **Size** → in (cm×cm)

☆ **Surface** (Smooth, nodular or lobulated).

☆ **Skin over** → **Redness:** If Acute lymphadenitis.
 → **Infiltration:** If lymphoma.
 → **Sinus:** If T.B. or Cold abscess.

☆ **Special sign** → **Transmitted pulsation:** If Para-aortic L.Ns.
 → **Moving up & down:** If Pre-tracheal L.Ns.

☆ **Other Swellings** → If generalized Lymphadenopathy look for Other L.Ns all over the body.
 → If localized Lymphadenopathy look for Infectious or malignant focus at draining area.



E — ☆ **Edge:** Well defined or Ill defined (or difficult to be seen)

D — **Distal effect:**

- A **Artery** → Colour changes & Trophic changes.
 V **Vein** → oedema.
 N **Nerve** → deformity

* PALPATION TMSEC D

2T — ☆ **Temperature:** → Warm as in acute lymphadenitis.

☆ **Tenderness** → Tender as in acute lymphadenitis.

M ☆ **Mobility of L.Ns to each other:**

- **Discrete** ① 2ry T.B.
 ② Early Hodgkin.
- **Matted** 1ry T.B. (See Q:1) [Fused but can be counted].
- **Chain** : T.B Q: *Why giving Rosary beads?* (See Q:2)
- **Amalgamated** : Non Hodgkin [Fused and can't be counted].



8 S ★ Site, Side, Shape, Size, Surface.

★ **Skin over** (To show if swelling attached to skin or Not) by :

1. Pinching skin : (not done).
2. Sliding the skin or pushing mass under skin
→ If Puckering = Infiltrated = **Lymphoma**.

★ **Special sign**: To confirm the (Inspection).

★ **Other Swellings** → If **Generalized Lymphadenopathy** look for Examination of L.Ns all over the body.

→ If **Localized Lymphadenopathy** look for Infectious or malignant focus (at the draining area)

➤ **In Cervical Lymphadenopathy**: Examine (Oral Cavity).
[Tongue, Teeth, Cheek, Lips, Tonsil, Thyroid, Face, Scalp, Parotid, Pharynx and Larynx]

➤ **In Axillary Lymphadenopathy** Examine Breast, Upper limbs, Ant. wall of the trunk until level of umbilicus and Post. wall of the trunk until level of umbilicus

➤ **In Supra-clavicular L.Ns (Virchow's gland)**
Q: What are the surgical importance of supra-clavicular L.Ns? (See Q: 3)

➤ **In Inguinal L.Ns** Examine Lower limbs, Genitalia, Perineum, Anal canal, Gluteal region and Ant., Abdominal wall below level of umbilicus.

E ★ **Edge**: Well defined or Ill defined

C ★ **Consistency** → Hard → Calcified Iry T.B or Non Hodgkin.

→ Soft → Degenerated Non Hodgkin.

→ Cystic → Cold abscess.

→ Firm → Acute lymphadenitis, Iry T.B., 2ry T.B. and Lymphoma.

2 D ① **Deep structure**:

i.e. Relation to deep muscle

② **Distal effect**:

A Artery → Colour changes & Trophic changes.

V Vein → oedema.

N Nerve → deformity

★ **PERCUSSION**

- Sternum for • Mediastinal mass.
- Tenderness as in Leukaemia

★ **AUSCULTATION**

- **Deapline's Sign** (Mediastinal L.Ns) = Bronchial breathing is Auscultated below level of T4 on **BACK**



HOW TO EXAMINE "LYMPH NODES"

A. Head & Neck

I. **Circular group**

○ **Inner Ring (Waldeyer's Ring)** (See Q: 4 & 5)

○ **Outer Ring**

① **Sub-mental L.Ns** (In Submental Δ)

➤ **AFFERENT (Drains)** • Central part of Tongue.

• Floor of mouth.

• Middle part of lower lip

➤ **EFFERENT** → Submandibular L.Ns but few Lymphatics into jugulo-omohyoid L.Ns → Lower Deep Cervical L.Ns

② **Sub-mandibular L.Ns** (In Sub-mandibular Δ) (See Q: 6)

➤ **AFFERENT (Drains)** • Inner angle of eye & Side of nose.

• Cheek, Angle of mouth, upper lip & lower lip except Middle part.

• Side of Tongue & Gums.

➤ **EFFERENT** → Jugulo-omohyoid group of L.Ns → Lower Deep Cervical L.Ns.

③ **Facial L.Ns** (on Buccinator muscle).

➤ **AFFERENT (Drains)**: Part of Cheek.

➤ **EFFERENT** → Upper Deep Cervical L.Ns.

④ **Parotid L.Ns** (In Parotid Substance) (See Q: 7)

➤ **AFFERENT (Drains)**: Front of scalp

➤ **EFFERENT** → Upper Deep Cervical L.Ns

⑤ **Pre-auricular L.Ns** (Infront of Tragus).

➤ **AFFERENT (Drains)**: Side of scalp

➤ **EFFERENT** → Upper Deep Cervical L.Ns

⑥ **Post-auricular L.Ns** (on the Mastoid process).

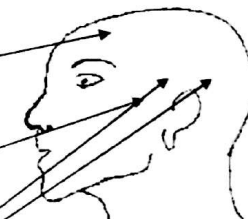
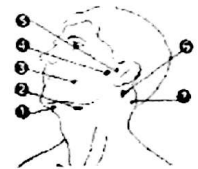
➤ **AFFERENT (Drains)**: Temporal part of scalp.

➤ **EFFERENT** → Upper Deep Cervical L.Ns

⑦ **Occipital L.Ns** (Between Mastoid process & ETERNAL Occipital protuberance) (See Q: 8)

➤ **AFFERENT (Drains)**: Back of scalp.

➤ **EFFERENT** → Lower Deep Cervical L.Ns



II. **Vertical group**

○ **Middle Line L.Ns**

① Pre-laryngeal L.Ns

② Pre-tracheal L.Ns.

③ Supra-sternal L.Ns.

○ **Lateral Group**

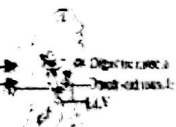
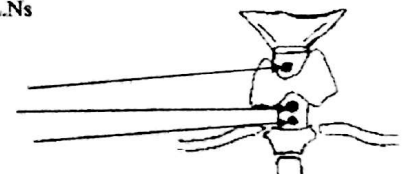
• **Upper Deep Cervical L.Ns**

• **Lower Deep Cervical L.Ns**

• **Intermediate group**

★ **Jugulo-Digastric**

★ **Jugulo-omohyoid**



B. Breast & Trunk

Palpate Axillary & Supra-clavicular L.Ns.

On The diseased side 1st

Axillary L.Ns

- They drain the upper limb down to umbilicus.
- They arranged in 5 groups.

Technique or palpations

- From **Front**, palpate the pectoral, apical and central groups.
- From **Side**, palpate the humeral group.
- From **Behind**, palpate Sub-scapular and supra-clavicular nodes.

1. The [Ant] Humeral group

- **SITE:** Under cover the Pectoralis major.
- **DRAINS:** ① Chest wall.
- ② Whole breast except tail.
- ③ Ant. Abdominal wall above umbilicus.

2. The [Post] Sub-scapular group

- **SITE:** Along post, axillary fold
- **DRAINS:** ① Axillary Tail
- ② Post, abdominal wall above umbilicus.

3. The lateral [humeral] group:

- **SITE:** Along upper part of Humerus
- **DRAINS:** All the upper limb.

4. The Central group:

- **SITE:** Central part of Axilla
- **DRAINS:** [1], [2], [3]

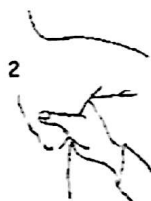
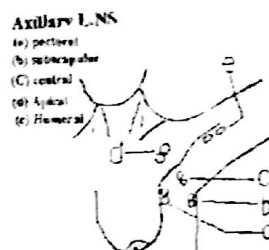


5. The Apical group

- **SITE:** External apex of Axilla
- **DRAINS:** [1], [2], [3], [4] + Infra-clavicular L.Ns.

N.B Supra-clavicular group

- **SITE** above clavicle.
- **DRAINS:** from Internal Mammary L.Ns



C. Upper Limb

1. Superficial group of L.Ns

○ Supra-trochlear (Epitrochlear) group of L.Ns

- **SITE:** Above Medial Epicondyle of Humerus (See Q:9)
- **AFFERENT:** Same as Delto-pectoral group.
- **EFFERENT:** Deep group of L.Ns.

2. Deep group of L.Ns

○ Lateral (Humeral) group of L.Ns

- **SITE:** At Surgical neck of Humerus
- **AFFERENT:** Drains all upper limb (Deeply).
- **EFFERENT:** Apical group of Axillary L.Ns.



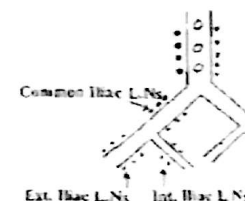
D. Abdomen

1. Ext. & Int. ILIAC L.Ns

2. Common ILIAC L.Ns

3. Para-aortic group of L.Ns

- **SITE:** One on each side of aorta & other one at common Iliac vessels.
- **AFFERENT:** Drains internal Iliac L.Ns which drain pelvis and External Iliac L.Ns which drain deep Inguinal L.Ns
- **EFFERENT:** Cisterna Chyli.



E. Lower Limb

(A) Superficial group of L.Ns

○ Vertical Limb Lat. to Long Saphenous vein

○ Transverse Limb (Below Inguinal ligament)

Medial Portion

- **drains** • Ant. Abdominal wall below level of umbilicus.
- The Perineum
- The skin of external Genitalia except glands of penis.

Lateral Portion

- **drains** • Post Abdominal wall below level of umbilicus.
- The Gluteal region.

(B) Deep group of L.Ns (Along the femoral vein) the largest called Cloquet

- **drains** • Gland penis.
- All lower limb.
- **drains** • External Iliac L.Ns.



ORAL
DISCUSSION

LYMPHADENOPATHY

Questions on Examination

Q1: How can you examine 'Matted' T.B L.Ns ?

✧ Hold 2 adjacent L.Ns, one on each hand than move them in opposite directions → Never separated.

Q2: What is the cause of 'Rosary Beads'?

✧ [Lymphangitis + Lymphadenitis]

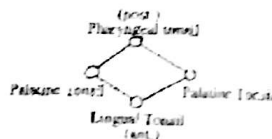
Q3: What is the surgical importance of Supraclavicular L.Ns?

➤ Lt. supra-clavicular L.Ns:

- Below diaphragm (Cancer stomach, Cancer colon & Hypernephroma)
- Above diaphragm (Lt Cancer breast & Lt. bronchial carcinoma)

➤ Rt. Supra-clavicular L.Ns:

- Below (Bare area of Liver only).
- Above (Rt. Cancer breast only).



Q4: What is meant by 'Waldeyer's Ring'?

Q5: What are Roles off 'Waldeyer's' in surgery?

- Waldeyer's ring.
- Fascia of Rectum.
- Waldeyer's ligament.
- Fascia of lower 1/3 ureter.

Q6: How can you DD between Submandibular gland & L.Ns ?

✧ Submandibular L.Ns only Rolled on lower border of mandible.

Q7: How can you DD between Parotid gland & L.Ns ?

✧ It is very difficult So → Biopsy must be done.

Q8: What Is the value of Occipital L.Ns Enlargement ?

✧ Enlarged with IMN (glandular fever)

Don't Forget:

1. Spinal accessory L.Ns Enlarged with Pediculosis & Frunculosis.
2. Jugulo-omohyoid L.Ns Enlarged with Cancer tongue.
3. Jugulo-digastric L.Ns Enlarged with Tonsillar diseases "Tonsillar L.Ns"

Q9: What is the value of Epitrochlear L.Ns Enlargement ?

✧ Enlarged with 2ry syphilis.

Q10: Where L.Ns arranged along [Arteries, veins & Nerves] ?

- L.Ns arranged along Veins: [Limbs & Head & Neck].
- L.Ns arranged along Arteries: [Abdomen]
- L.Ns arranged along nerves:
 - Epitrochlear L.Ns [Ulnar nerve].
 - Accessory L.Ns [Spinal accessory nerve]
 - L.Ns along [Lat. Popliteal nerve].

Good luck

Lymphoedema Sheet

Chapter 13

LYMPHOEDEMA "ELEPHANTIASIS"

★ **AETIOLOGY**A. **Congenital (1ry Lymphodema)** Rare

- Congenital Aplasia or Hypoplasia of Lymphatics.
- It may be → Hereditary or Familial (**Milroy's Disease**)
→ Congenita - Precox - Tarda.

B. **Acquired (2ry Lymphodema)**

- **Post Traumatic** : A-V Fistula or Circumferential skin loss.
- **Post Operative** : Extensive block dissection of inguinal or Axillary L.Ns
Which operations ? (See Q: 1)
- **Post Parasitic** : **Filariasis** *Why?* (See Q: 2)
- **Post Inflammatory** : → Chronic specific: T.B & S
- **Post Neoplastic** : (usually 2ries and rarely Lymphoma)
→ Malignant Axillary L.Ns = Due to Cancer breast

★ **PATHOLOGY**

lymph stasis → lymphangitis (streptococcal) → More obliteration of Lymphatics → 4 stages .

- ① Stage of **Pitting oedema** : (Early)
- ② Stage of **Lymphorrhoea** : (Rupture of lymphatic vesicles)
- ③ Stage of **Non pitting oedema** : (fibrosis) *why?* (See Q: 3)
- ④ Stage of **Warty Pseudopapillomatus** i.e. **Elephantiasis**

I. LYMPHODEMA SHEET

★ **PERSONAL HISTORY**

1. **Name**
2. **Age**
 - At birth → Lymphoedema Congenita
 - At puberty → Lymphoedema Precox
 - At adult → Lymphoedema Tarda.
3. **Sex**
4. **Occupation** : Barefooted i.e. Farmers
5. **Residence** : **Endemic Area for Filariasis**
(Rashid, Damietta, Mansoura, Giza, Embaba).
6. **Marital status**
7. **Special habits of medical importance**

★ **COMPLAIN** Swellings ± Pain ± Fever

★ PRESENT HISTORY

- I. Analysis of complaint
- II. Analysis of Part affected
- III. Analysis of Other parts affected
- IV. Ask about the Possible causes

I. Analysis of complaint (Swelling + Pain)

SWOLLEN LIMB

1. O.C.D. (Onset - Course - Duration)

2. PAINS

- ☆ Site & Side (If localized)
- ☆ Number (Unilateral or Bilateral)
- ☆ Investigations & ttt (done before)
- ☆ Associated swelling (L.Ns) *why?* (3 causes) (See Q: 4)
- ☆ Pain (Painless) except if lymphangitis

1. O.C.D
2. Site
3. Extent
4. Characters
5. ↑ by
6. ↓ by
7. Associated symptoms

II. Analysis of Part affected

i.e. Local complications of Lymphoedema

ASK ABOUT : 1. Recurrent Cellulites & Lymphangitis.

2. Blebs : If infected → Painful
3. Rupture Blebs : i.e. Ulcer [At Dorsum of foot]
4. Heaviness & limitation of movement : i.e. Huge Limb.

III. Analysis of Other parts affected

i.e. General complications of Lymphoedema

➤ Toxic Manifestations (F.H.M.A).

- Elephantoid Fever: High Fever with rigors and associated with pain ± gradual increasing in size of swelling.

➤ Metastatic Manifestations (L.B.L.B)

- To exclude Lymphangiosarcoma (very rare) or any associated causative neoplasm

IV. Ask about the Possible Causes

☆ Post [Traumatic - Operative - Parasitic - Inflammatory - Neoplastic] See Introduction

☆ History of DVT → To Exclude venous oedema

★ ASSOCIATED

- Similar Condition.
- Important disease as Cardiac, Renal, Endocrinal.
- Allergic manifestation (Skin rashes + Itching)

If Systemic Oedema

★ FAMILY HISTORY

- Similar conditions as (Milroy's disease)

II. LOCAL EXAMINATION

⊙ Don't forget : • Looking for other sites of Lymphoedema.

Q: What are the other sites of Lymphoedema? (See Q: 5)

★ INSPECTION

- 7 S
- ☆ Site & Extent usually lower 2/3 of the leg.
 - ☆ Side → Bilateral : If due to systemic cause.
→ Unilateral : If due to Lymphoedema.
 - ☆ Skin conditions
 - ① Scars of trauma.
 - ② Papillary projections
 - ③ Cellulites & streaks of lymphangitis.
 - ④ Lymphocele or Lymphorrhoea
 - ⑤ Café au lait patches *Why?* (See Q: 6)
 - ☆ Sole of feet & Creases : Not affected *Why?* (See Q: 7)
 - ☆ Scars of previous operation :
 - ① Axillary region : [If Lymphoedema in the Arm]
 - ② Groin region : [If Lymphoedema in the Leg]
 - ☆ Swelling at groin Region : i.e. A. V. fistula [Expansile pulsation] or L.Ns
 - ☆ Scrotum → Oedema as part of systemic oedema.
→ Lymphoedema.



★ PALPATION

- 3 T
- Temp → Warm If (infected).
 - Tenderness → Tender If (infected).
 - Thrill → If (A.V. fistula) i.e. continuous thrill.

Then palpate: 7

- ① Skin : To confirm inspection.
- ② S.C Oedema (pitting or non pitting).
- ③ Joint To exclude Mechanical block (See Q: 8)
- V ④ Vein V. V or DVT to exclude (venous oedema).
- A ⑤ Artery If (A-V. fistula) i.e. localized swelling at groin region with Expansile impulse and continues thrill.
- N ⑥ Nerve If Elephantiasis Neuromatosa, i.e. Café au lait patches
- L ⑦ L.Ns Draining L.Ns → If Enlarged, Tender and Firm = Infection.
→ If Hard, 1st mobile later on fixed = Malignancy as complications or from the start.



IV. DIAGNOSIS

- Lymphoedema (1ry or 2ry). → If 2ry Lymphoedema (Filaria or not)

ORAL
DISCUSSION

LYMPHOEDEMA

Questions on Introduction

Q1: Which operations having high risk for Lymphoedema ?

☆ Extensive block dissection of inguinal L.Ns e.g. Radical Vulvectomy.

☆ Extensive block dissection of axillary L.Ns e.g. Radical Mastectomy.

Q2: How can Filariasis lead to 2ry Lymphoedema ?

☆ Filariasis → lymphatic obstruction then on top of this obstruction, streptococcal infection occur.

Q3: Why does fibrosis occur in Lymphoedema ?

☆ Because, High protein level.

Questions on Sheet

Q4: What are the causes of L.Ns enlargement with Lymphoedema?

- 2ry infection if associated Lymphangitis.
- Lymphangiosarcoma (As a complication) V. rare.
- Malignant L.Ns (As a causes) e.g. Axillary or Inguinal L.Ns.

Questions on Examination

Q5: What are the other sites of Lymphoedema ?

- Upper Limb.
- Lower Limb.
- Scrotum.
- Vulva.
- Breast.

Q6: Why Café au lait patches can be detected in Lymphoedema?

☆ Because of Elephantiasis Neuromatosa.

N.B: Also Mechanical block of joint is associated

Q7: Why skin creases & sole of foot not affected?

- ☆ Because → Skin creases. Drained by deep Lymphatics.
- Sole of foot • Drained by deep Lymphatics.
- Pressured by [Planter Aponeurosis].

Q8: Why Mechanical Block off joint can be detected in Lymphoedema?

☆ Because of Elephantiasis Neuromatosa.

N.B: Also Café au lait patches is associated

Good luck

Salivary Gland Sheet



I. PAROTID SWELLING SHEET

★ PERSONAL HISTORY

1. Name
2. Age → Mumps with children.
→ Malignancy with old age.
3. Sex → Malignancy more common with Female
4. Occupation
5. Residence For bad hygiene i.e. bad oral hygiene.
6. Marital status
7. Special habits as Alcohol i.e. bad oral hygiene.



★ COMPLAINT ★ Swelling ± pain

★ PERSONAL HISTORY

- I. Analysis of complaint (Swelling ± Pain)
- II. Analysis of **Part** affected
- III. Analysis of **Other parts** affected

I. Analysis of complaint (Swelling ± Pain)

1. **O.C.D.** • Gradual onset & progressive Course = Malignancy.
• Remission with exacerbation Course = Stone of the duct.

2. PAINS

- ☆ Site
- ☆ Number
- ☆ Investigations & ttt (done before)
- ☆ Associated swelling as (L.Ns metastasis)
- ☆ Pain if associated Q: What are the causes? (See Q:2)

1. O.C.D
2. Site
3. Extent
4. Characters
5. ↑ by
6. ↓ by
7. Associated symptoms

II. Analysis of Part affected

⇒ To exclude **Facial palsy** if malignancy.

So **Ask about:** [Inability to close the eyes, Accumulation of food between Gums & Cheek and dripping of Saliva from angle of mouth].

III. Analysis of Other parts affected

⇒ **Toxic Manifestations (F.H.M.A)** → To Exclude Acute Sialadenitis or Mumps.

⇒ **Malignant Manifestation (L.B.L.B)** → To Exclude Malignancy.

★ PAST HISTORY

- ★ Similar condition
- ★ History of **diseases** as DM, hypertension, heart diseaseetc.
- ★ History of **previous operation**

★ FAMILY HISTORY

- ★ Similar condition

II. GENERAL EXAMINATION

AIM: Detection of L.Ns Enlargement & Sign of Metastasis

III. LOCAL EXAMINATION

★ INSPECTION N S E D

N — ☆ **Number** (Single mass)

8 S ☆ **Site** at parotid region which present between Ramus of mandible & ant. border of Sternomastoid.
For Surface Anatomy (See Q: 3)

☆ **Side** → Rt or Lt or bilateral

☆ **Shape** → (Oval, Rounded or Irregular) then look behind

- If **localized** → Not raised the lobule of ear
- If **diffused** → Raise the lobule of ear
i.e. Sulcus will be seen.

☆ **Size** → in (cm×cm)

☆ **Surface** → **Smooth** : Chronic Parotitis.

→ **Lobulated**: Pleomorphic or Monomorphic Adenoma.

→ **Irregular**: Carcinoma of the Parotid.

☆ **Skin over** → for Redness or Fistula

☆ **Special sign** [Inspect the **Orifice** of Parotid duct & Tonsil].

(1) Inspect the Orifice of Parotid duct

- Inside the cheek opposite the 2nd upper molar tooth.
- Using **torch** to show Hyperaemia.
- Do genital pressure from **outside** if **purulent** discharge → **Acute Parotitis**.

(2) Inspect the Tonsil:

If Pushed medially → Enlarged deep part of the gland.

☆ **Other Swellings** look for

1. **Opposite Parotid gland.**

2. **Submandibular gland**

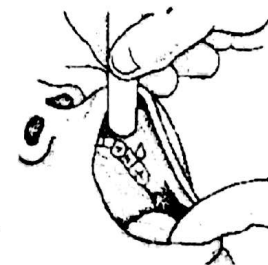
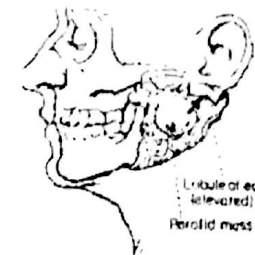
At Submandibular triangle & it's ducts which open in the floor of the mouth on either side of the Frenulum of the tongue.

3. **Lacrimal gland:** (Narrow Palpebral Fissure)

May be enlarged with (Sjogren's Syndrome) i.e. Mikulicz disease.

E — ☆ **Edge** • **Well defined**: Inflammatory or Benign Lesion

• **Ill defined**: Malignant Lesion.



① Deep structure :

- [1] Muscles : • For Masseter : (Ask pt. to Clench his teeth).

- For Sternomastoid : (Ask Pt. to turn his face to the opposite side) against resistance.

Result : ☆ If More prominent: Superficial (Inflammatory or Benign lesion).

- ☆ If Less prominent: Infiltrate the muscle (Malignancy).

- [2] T.M Joint: If T.M Joint restricted this means infiltration by malignancy

② Distal effect: For (Facial palsy) so examine facial nerve.➤ MOTOR : Examine muscle of expression of the face :

- Ask pt. to Raise his eyebrows i.e. Frontalis Muscle.
- Ask pt. to Close his eyelids i.e. Orbicularis Oculi.
- Ask pt. to Blow his cheek i.e. Buccinator Muscle.
- Ask pt. to Show his teeth i.e. Retractor Anguli Oris Muscle.
- Ask pt. to Whistle i.e. Orbicularis Oris Muscle.

➤ SENSORY : Examine taste sensation of ant. 2/3 of the tongue :

☆ For Innervation of the Tongue (See Q: 4)

- By Applying drop of sweet, bitter or salty on it's tip.
- Don't forget: (1) Dry tongue. (2) No speaking.

➤ DEEP REFLEX : [Glabellar reflex] (C7- C7)

- While pt.'s eye passively closed, tap the Glabella with a hummer.
- Normally : There is bilateral contraction of Orbicularis Oculi.

➤ SUPERFICIAL REFLEX : [Corneo - Conjunctival reflex] (C5-C7)

- While pt. looking upwards & inwards (why?) → to avoid Photic stimulation.
- Touch the Corneo - Conjunctival junction using piece of cotton.
- Normally: Stimulation of one eye result blinking of both eyes.
- Absent at one side: Denotes facial paralysis at same side [pt. feel the piece of cotton].
- Absent at both sides : denotes :
 - a. Bilateral Facial paralysis.
 - b. Ophthalmic affection.

Q: How to differentiate (a) From (b) ? (See Q: 5)

- ② Draining LNs Look for enlarged upper or lower deep cervical L.Ns for infection (firm & tender) or malignancy (Hard).

★ PALPATION TMSEC D

2T ☆ Temp Warm if 2ry infection

☆ Tenderness Tender if Malignancy.

M → Mobility Examine in both directions-

- Mobile : Inflammatory or Benign lesion.
- Fixed : Malignancy.

8S ☆ Site, Side, Shape, Size, Surface → Confirm [See Inspection

☆ Skin over Pinching (not done) or sliding the skin to show whether the parotid attached to skin or not.

☆ Special sign Palpate parotid duct (Stenson's Duct)

N.B. Proximal 2/3 of duct: Not felt.

Distal 1/3 of duct : Felt so examine for stone from (outside) or purulent discharge from (inside).

☆ Other Swellings: Palpate other parotid, Submandibular region and lacrimal gland.
Q : What is the anatomical site of lacrimal gland ? (See Q: 6)

E — Edge • Well defined: Inflammatory or Benign lesion.

• Ill defined : Malignant lesion.

C — Consistency:

1. Soft = Chronic Endemic Parotitis.
2. Firm = Pleomorphic Adenoma.
3. Cystic = Monomorphic Adenoma.
4. Hard = Carcinoma of Parotid.

3 ① Deep structure :

➤ Muscle: Examine mobility before and after contraction of Masseter and Sternomastoid muscles.

➤ Bone : If parotid mass fixed before contraction.

➤ Joint: If thickening & restriction of T-M. joint.

② Distal effect:

N → Facial Nerve: for Facial Palsy (See Inspection).

A → Superficial Temporal Artery : For Pulsation because malignant parotid compress E.C.A.

③ Draining L.Ns Palpate Upper & Lower Deep Cervical L.Ns See chapter (12)

★ SPECIAL TESTS [Lemon Test]

Ask pt. to Suck a piece of lemon there is May show →

① IF Obstruction of duct: Enlarged and More painful gland.

② IF Salivary Fistula : Discharges of saliva from opening at skin

③ Frey's syndrome [Gustatory Sweating]

The skin over the temporal region may become flushed with beads of sweats



SALIVARY GLAND**QUESTIONS ON INTRODUCTION**

Q1: What are the DD between Adenolymphoma, Lymphadenoma & Lymphadenoid?

- ✓ Adenolymphoma = Monomorphic adenoma of salivary gland.
- ✓ Lymphadenoma = Hodgkin's Disease.
- ✓ Lymphadenoid = 2ry T.B.

Q2: What are the causes of Painful Parotid Gland ?

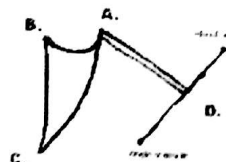
- Malignancy.
- Mumps.
- Autoimmune.
- Sialadenitis.
- Stone of duct.
- Sialectasis.

QUESTIONS ON EXAMINATION

Q3: What is the surface Anatomy of Parotid gland & Duct ?

✓ The Gland (By 3 points):

- A • Point on Tragus.
- B • Point on Mastoid process.
- C • Point on (one inch below & behind angle of the mandible).



✓ The Duct (Middle 1/3 of a line between)

- A • Tragus
- D • Mid-point between Ala of nose & Angle of mouth

Q4: What is Innervation of Tongue?

✓ Motor: Cr 12 (Hypoglossal n.).

✓ Sensory: • Post 1/3 → Cr 9 (Glosso-pharyngeal n.).
• Ant. 2/3 → Cr 5 (Trigeminal n.).
 ↳ Cr 7 (Facial n.).

9/5&7

Q5: How to DD between Bilateral Facial paralysis & sensory Ophthalmic affection?

- Bilateral Facial affection → ملس
- Sensory Ophthalmic affection → غير ملس

Q6: What is the Anatomical Site of Lacrimal Gland?

★ At upper lateral part of roof of orbit i.e. lacrimal fossa

Good luck

Short Cases



Chapter 15

1. CLEFT LIP & CLEFT PALATE

INTRODUCTION

* **EMBRYOLOGY** The Face developed from 5 processes

A. Frontonasal Process: It from →

- ① Forehead & Nose.
- ② Philtrum: middle line depression in upper lip.
- ③ Premaxilla: V-shaped ant. Part of upper jaw carrying 4 incisors 1ry Palate

B. Two Maxillary Processes: (one on each side)

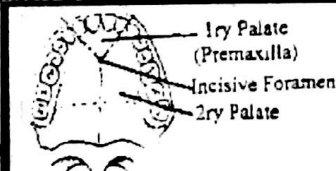
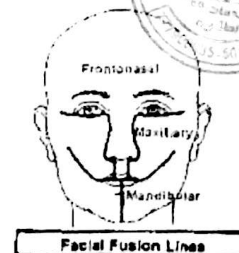
- ① Fuse with Frontonasal process to form →

- ① Cheeks
- ② Upper lip Except Philtrum
- ③ Two palatine processes which fuse in the middle line to form 2ry Palate

C. Mandibular Processes: (one on each side)

- ① Fuse in middle line to form .

- ① Part of cheeks that cover the mandible
- ② Lower lip
- ③ Mandible.



Don't Forget

[A] The Palate: Is formed by fusion of

- 1ry Palate (Premaxilla) from Frontonasal process.
- And • 2ry palate from two maxillary processes.

N.B: The Incisive foramen mark the junction of the 2 components of the palate

[B] The Lip • Upper Lip → Philtrum : From Frontonasal process.

→ Other parts: From 2 maxillary processes.

• Lower Lip → From 2 mandibular processes.

* CONGENITAL ANOMALIES OF THE FACE

A. Abnormalities due to Failure of fusion:

➤ Facial Clefts: →

- ① Craniofacial Cleft : Rare due to failure of fusion between Frontonasal and maxillary processes. (Unilateral or Bilateral).

② Cleft Lip

③ Cleft palate

See Below

➤ Macrostomia

B. Abnormalities due to Excessive fusion

- Narrow Palpebral fissures.
- Microstomia.

CLEFT LIP & CLEFT PALATE SHEET

★ **PERSONAL HISTORY** As Usual but **Don't forget** : patient since birth.

★ **COMPLAINT** A Mother Complaining from **Disfigurement in her baby's Face**

★ **PRESENT HISTORY**

- I. Analysis of Complaint
- II. Analysis of **Part** affected
- III. Analysis of **Other parts** affected
- IV. Analysis to reach the **Possible causes**

I. Analysis of complaint

1. **O.C.D.** → Discovered Since birth.

2. PAINS

- ★ Site
- ★ Number
- ★ Investigations & ttt (done before)
- ★ Associated Anomalies
- ★ Pain (if present) Analysed as usual

II. Analysis of part affected

i.e. Ask about **Local complications**

I. **Cleft Lip** [Cleft lip doesn't interfere with suckling] But there might be

① Associated **Abnormal Teeth growth**.

② Marked **Protrusion of Premaxilla** with Bilateral Cleft lip

II. Cleft palate

- ① **Impairment of normal Suckling** due to inability to Create -ve Intra-Oral Pressure because Naso-Oral communication.
- ② **Impairment of normal Speech** i.e. Nasal Twang or Nasal Tone
Try to • Naso-Oral communication. • Hearing loss.
- ③ **Impairment of normal Hearing** due to oedema of the orifice of the Eustachian tube 2ry to pharyngeal inflammation from regurgitated food.

III. Analysis of Other part affected

i.e. General complications with cleft palate only

① **Aspiration Pneumonia:**

- Due to reflux of food into nasal chambers through the Oro-nasal communication then if aspirated, leads to **Pneumonia**.

② **Recurrent Otitis Media**

[F.H.M.A.] + Ear discharge

IV. Analysis to reach the Possible causes

i.e. **Predisposing Factors** for mothers

- ① **Fever & Skin Rashes** → German Measles.
- ② **Drug intake** (specially during 1st Trimester).
e.g Salicylate, Corticosteroids or Cytotoxic drugs
- ③ **Addict** or not & history of **Alcohol** intake or Not.
- ④ **Exposure** to Irradiation.

★ **PAST HISTORY**

- ⊙ Similar condition.
- ⊙ Important disease of mothers as S or fever during Pregnancy.

★ **FAMILY HISTORY**

- ⊙ Similar condition.
- ⊙ +ve Consanguinity (It is Familial in 12%).

II. LOCAL EXAMINATION

A. Cleft (Hare) Lip



★ **TYPES**

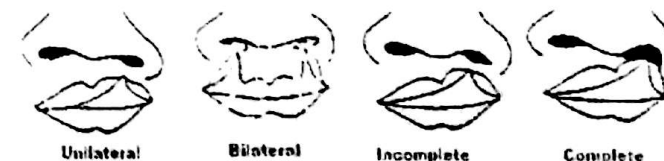
(I) **Upper (Hare) Lip :**

1. **Unilateral (85%) or Bilateral Cleft lip:**

e.g **unilateral**: due to failure of fusion between maxillary process forming **lateral part of the lip** and Fronto-nasal process (forming **Philtrum**)

2. **Partial (Incomplete) or Complete:** Whether extends in the floor of the nostril or not.

3. **Simple or Alveolar:** i.e. Associated with Cleft Palate or not.



(II) **Lower (Hare) Lip (Very Rare)**

Median Type: Due to failure between 2 Mandibular processes.



* TREATMENT [Plastic Repair]

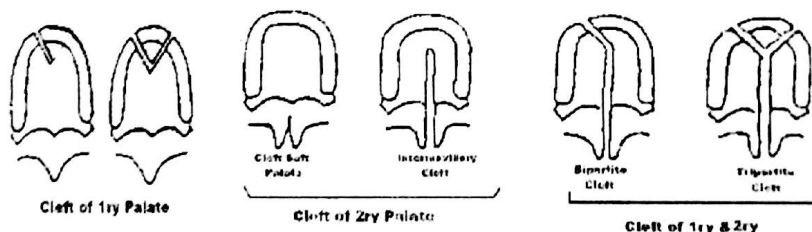
- ① **Aim of Treatment:** To improve appearance and to prevent complications.
- ② **Timing of Repair** (10 mg% Hb), 10 weeks (age) & 10 pound (weight)
- ③ **Principles**
 - ① Paring the Edges.
 - ② Releasing incision in the Gingivo- labial sulcus to have lax flaps
 - ③ Symmetry of lip without vertical shortening with minimal scarring using Z-Plasty
 - ④ Suture in (3 layers) of lip [Skin, Muscle & Mucous membrane]



B. CLEFT PALAT

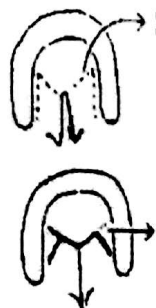
* TYPES

- ① **Cleft of the 1ry Palate:** Unilateral or Bilateral.
- ② **Cleft of the 2ry Palate:** Cleft Soft Palate. Inter-maxillary Cleft & Bifid Uvula
- ③ **Cleft of the 1ry and 2ry Palates:** Bipartite & Tripartite Clefts



* TREATMENT [Plastic Repair]

- ① **Aim of Treatment:** To achieve adequate speech and dentition.
- ② **Timing of Repair** At the age of 1-1.5 year before the child starts to speak Why? because it may be difficult to teach the child to speak properly as Nasal twang once established is irreversible.
- ③ **Principles**
 - ① Paring the Edges.
 - ② Releasing incision in the Gingivo- labial sulcus to have lax flaps
 - ③ Fracture of the head of the Hamulus to relax the Tensor Palati
 - ④ Suture in (3 layers) of lip [Skin, Muscle & Mucous membrane]



2. HYPOSPADIUS

[The Commonest Congenital Anomaly Of Urethra]

SHEET

- * **PERSONAL HISTORY** As Usual
- * **COMPLAINT** Abnormal stream of urination ± complications
- * **PRESENT HISTORY**
 - I. Analysis of Complaint
 - II. Analysis of Part affected
 - III. Analysis of Other parts affected



I. Analysis of complaint

1. **O.C.D.:** → Discovered Since birth.

2. PAINS

- ☆ **Site**
- ☆ **Number**
- ☆ **Investigations & ttt** (done before)
- ☆ **Associated anomalies**
- ☆ **Pain** (if present) Analysed as usual



II. Analysis of part affected

i.e. Local complications

☆ **Ask about** Difficulty of micturation i.e. Abnormal stream

- ☆ **Exclude**
 - ① Other disorders of urination as Frequency or Incontinence.
 - ② Disorders of urine as Amount (Oliguria, Polyuria or Anuria). or Colour (e.g. Haematuria) or Aspect (e.g. Necroturia).

(Oral Discussion only)

(I) **Difficulty:** may be

- ① **At the beginning**
 - Hesitancy → S.E.P.
 - Retention → Inability to pass urine. (Acute or chronic)
 - Precipitancy → Inability to Hold urine (with desire).
 - Urgency → Sudden desire to micturate.
- ② **During the act**
 - B.N.O. → pt. has to strain to maintain the stream (Small But Forcible)
 - S.E.P. → Strain stop the stream so (Weak interrupted ± Forked)
 - Hypospadias → Abnormal Stream.
- ③ **At the end**
 - S.E.P. → Dripping.
 - Diverticulum → Double Micturation.

(II) **Frequency:** may be

- By Day = Bladder stone.
- By Night = SEP
- Day & Night = Cystitis.

(III) **Incontinence:** may be

- False: Chronic Retention with Over flow.
- True: Ectopia Vesica
- Stress: Female with ↑ (I.A.P.)

III. Analysis of Other part affected i.e. General complications

① **Psychological** Troubles.

② **Sterility (Mechanical)** due to failure of instillation of semen in vagina.
i.e. Curved penis interferes with Erection.

* PAST HISTORY

- ① Similar condition.
- ② Important disease or heart diseasesetc.

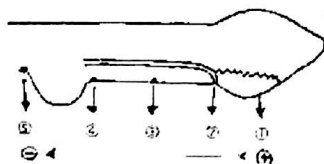
* FAMILY HISTORY

- ① Similar condition.
- ② +ve Consanguinity

III. LOCAL EXAMINATION

* TYPES Sites of External Meatus

- ① **Glandular**: At Glans penis.
- ② **Coronal**: At Junction of Glans penis and it's body.
- ③ **Penile**: At Undersurface of penis.
- ④ **Peno-scrotal**: At Junction of penis and perineum.
- ⑤ **Perineal**: Scrotum is Split & the urethra open between them.



* **CIRCUMCISED OR NOT** Presence or Absence of Prepuce.

* **DIRECTION OF PENIS** Curved or not due to **Chordee** why? →

Because **Chordee** is a fibrous band leads to curved penis downwards in all sites of External Meatus Except glandular Hypospadias.

Congenital Anomalies of the Urethra

- ① **Phimosis**: The Prepuce becomes contracted & will not retract over the glans → "Pin hole" Meatus.
- ② **Para-Phimosis**: The Prepuce becomes tightly retracted beyond the base of the glans [If Retraction not relieved → gangrene of glans].
- ③ **Epispadias**: Rare. (The Urethral orifice opens on upper surface of penis).



3. UNDESENDED TESTIS

* **PERSONAL HISTORY** As Usual

* **COMPLAINT** Mother observing one side of scrotum is **Empty**.

* **PRESENT HISTORY**

- I. Analysis of Complaint
- II. Analysis of **Part** affected
- III. Analysis of **Other parts** affected

I. **Analysis of complaint**

1. **O.C.D.**
2. **PAINS**

☆ **Site** (The Testis may become arrested at →)

- ① The Abdomen. If bilateral it is called Crypto-orchidism.
- ② Inguinal canal.
- ③ External ring.
- ④ Neck of scrotum.

☆ **Number** (side)

Bilateral 20%. (i.e. **Crypto-orchidism**).

☆ **Investigations & ttt** (done before)

☆ **Associated swellings** (L.Ns Metastasis) **Because** of high incidence of malignancy

☆ **Pain** Pain (usually pain less) **Except** if complicated by Torsion Testis (2%)

II. **Analysis of part affected** i.e. Local complications

- ① If Testis can be brought to scrotum or not before puberty.
because If not → Spermatogenesis is **Lost** Because ↑ temp, in abdomen.
- ② **Severe pain ± Shock**: To exclude Torsion testis (2%).
- ③ **Recurrent Trauma**: May leads to **atrophy**.
- ④ **Oblique Inguinal Hernia**: very common (75%).

III. **Analysis of Other part affected** i.e. General complications

- ① **Psychological disturbance**
- ② **(F.H.M.A.)** To exclude Epididymo-Orchitis (Rare).
- ③ **(L.B.L.B.)** To exclude Malignancy (Common).

* **PERSONAL HISTORY**

- ① Similar condition.
- ② Important disease or heart diseasesetc.

* **FAMILY HISTORY**

- ① Similar condition.
- ② +ve Consanguinity



II. LOCAL EXAMINATION

" Mal-descended Testis "

A Testis which is not in the scrotum may be "Arrested" = (Undescended).
or "Deviated" = (Ectopic)
or (Retractile)

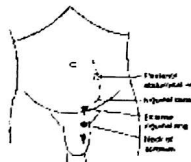
* INSPECTION

- ⊙ [Small underdeveloped empty scrotal compartments].
- ⊙ [Side of scrotum is not well developed].
N.B.: Scrotum is Fully developed in Retractile Testis.
- ⊙ [If the Scrotum well developed] Do ⊘
[Squatting Position Test] or [Chair Test] to confirm
diagnosis of Retractile Testis. →
- Q: What is the value to DD Undescended from Retractile testis ?
➤ ANSWER: To decide (surgical ttt or not)
- ⊙ Associated (O.I.H.) in 75% of cases.



* PALPATION

- ⊙ [Testis not felt in the scrotum and may be felt in abnormal place]. →
- ⊙ [Palpate for the Testis in the inguinal region].
- a. If not felt: Undescended Testis.
- b. If felt: Undescended or Ectopic testis or Retractile Testis.
So to differentiate between them.
- I. Ask pt. to contract his abdominal muscles (straining) → If the testis becomes more Prominent = Ectopic Testis
- II. Try to pull down the testis If Easily pulled down = Retractile Testis
If not felt: Undescended Testis



N.B. Sites of Ectopic Testis :

- ① Inguinal: Superficial to the Aponeurosis of the muscle.
- ② Perineal.
- ③ Pubo-penile : (Root of the penis).
- ④ Femoral : In the femoral triangle.



Don't Forget (Testis) :

Oval, Firm, Slippery edge and Show Testicular sensation when squeezed.

Q: What is the value of P.R. in Crypto-orchidism ?

➤ ANSWER: Atrophy of Prostate & Seminal vesicle.

Good luck

Dear Student, Don't Forget

How should you appear in the oral exams?

You should appear GENTLE, POLITE, PROPERLY DRESSED, CONFIDENT

How should you talk?

You should talk CLEARLY, SLOWLY AND CONCISELY. Do not rush to the answer, think for a while (few seconds) before you begin to answer to question. Also, do not move your hands describing what you are saying.

How should you listen to the professor's questions?

You should be listening carefully, looking interested in what he is saying and NEVER INTERRUPT HIM / HER.

How should you behave to the examiner?

You should be stable, polite, do not smile too much, do not look miserable, do not be too friendly with the examiner, and NEVER SAY JOKES.

What to do if you cannot understand the question mentioned the examiner?

Say " Sorry Sir, I could not understand this question".

What to do if you have not the answer in mind ?

Say " Sorry Sir". I do not know the answer of this question" NEVER EVER SUGGEST AN ANSWER ?



With My Best Wishes

Dr. Wael Metwaly

Tel: 7237606

Mob: 012 2466443